THE RUBBER AGE

ESTABLISHED 1917

COVERS ALL PHASES OF THE PRODUCTION AND MARKETING OF CRUDE RUBBER AND THE MANUFACTURE AND DISTRIBUTION OF RUBBER GOODS

Vol. 37 AUGUST, 1935 No. 5

INDEX TO CONTENTS

Effect of Antioxidants on the Natural and the Accelerated Aging of Rubber 241
By R. F. Tener and Wm. L. Holt

Displaying Rubber Products 245
By M. E. Lerner

New "Stretchable" Lacquer Finish 248

Latex Coated Kitchen Accessories 249

John R. Gammeter—Inventor 250

A Chlorinated Rubber Paint 250

Gatex—A Flat Belt Drive 250

Bendix Nu-Grip Safety Process 251

Goodyear "Plioweld" Rubber Lining 252

Rubbone—An Oxidized Rubber 252

Hydrogen Sulphide from Rubber 252

New Equipment Section 253

REGULAR DEPARTMENTS

Late Domestic News 257
Financial News 260
Book Reviews 255
New Goods Section 265
Names in the News 263
Rubber, Cotton Markets ... 266
Editorials 256
Chemical Markets 267
Statistics 268
Market Place 272
Advertising Index 276
Classified Ads 276

THE RUBBER AGE, published on the 15th of each month by the Palmerton Publishing Company, Inc., at East Stroudsburg, Pa. Editorial and Advertising offices at 250 West 57th Street, New York City. Established 1917.

Entered as Second Class Matter, October 20, 1933, at the Post Office at East Stroudsburg, Pa., under Act of March 3, 1879.

Subscription Rates: Domestic, $2.00 a year; Canada, $3.00; Foreign, $3.00. Single copies, up to 3 months old, 25 cents; over 3 months old, 50 cents.

Telephone: COlumbus 5-2923, 5-2924.

Contents Copyrighted 1935 by the Palmerton Publishing Company, Inc. Indexed in Industrial Arts Index.

PAUL L. PALMERTON .....President
E. D. OSBORN ....Vice-President and Sec'y
PETER P. PINTO .....Treasurer

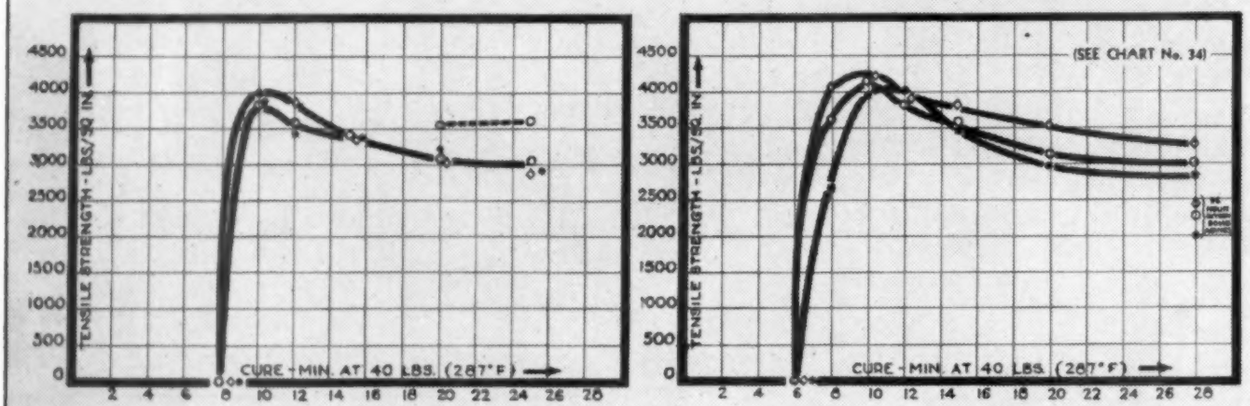
M. E. LERNER .....Managing Editor
A. H. GOLD .....Circulation Manager
PETER P. PINTO .....General Manager

"FAST" and "SLOW" CURING ZINC OXIDES with "MONEX"

SMOKED SHEET	100.0
SULPHUR	1.0
"MONEX"	1.0
"B. L. E."	3.0
ZINC OXIDE	10.0

New Jersey Zinc

PALE CREPE	100.0
SULPHUR	2.0
"MONEX"	0.25
"B. L. E."	1.0
ZINC OXIDE	10.0



	PbO%	Acidity as SO_3 %
O -XX RED-4 ZINC OXIDE	0.3	0.3
* -XX RED-103 ZINC OXIDE	0.1	0.04
◇-XX RED-110 ZINC OXIDE	0.7	0.04

ORIGINAL RESULTS
AFTER 96 HOURS OXYGEN BOMB AGING

No. 41 of a series of charts showing a comparison of "FAST" and "SLOW" curing zinc oxides with typical accelerators.

With 1% of sulphur there appears to be little difference between the three types of zinc oxide on original tensile results. After 96 hours oxygen bomb aging, however, XX Red 4 appears to be definitely superior. With 2% of sulphur, XX Red 110 gives a somewhat flatter curing curve and has better aging properties

UNIFORM QUALITY ZINC OXIDES

THE NEW JERSEY ZINC COMPANY

THE RUBBER AGE

Published Monthly at East Stroudsburg, Pa.
Editorial and Advertising Offices: 250 W. 57th St., New York

Vol. 37 AUGUST, 1935 No. 5

Effect of Antioxidants on the Natural and the Accelerated Aging of Rubber

By Rees F. Tener and William L. Holt

THIS paper describes a study of the effect of several commercial antioxidants on the deterioration of typical, soft rubber compounds when exposed to the weather, stored in a dark cabinet at room temperature, and subjected to accelerated aging in air, and in compressed oxygen at elevated temperatures. The tensile strength of the rubber at break is taken as a measure of the deterioration. The results have been interpreted in terms of the improvement in tensile strength and the increase in the useful life of the rubber afforded by the antioxidant. The value of a given antioxidant is found to vary with the compound in which it is used and with the conditions of test. Under some circumstances the antioxidant has little effect on the rubber, but under other conditions it may increase the tensile strength and lengthen the life of rubber to a marked extent. Broad comparisons between antioxidants are not possible because the manner in which each antioxidant functions depends on specific conditions and no single material appears the best under all circumstances. The word antioxidant is understood, in the practical sense, to mean a substance that is added to rubber to increase its useful life.

Natural rubber contains certain substances which, though present in very small amount, afford a high degree of protection against oxidation. Indeed, when these natural antioxidants are removed the useful life of rubber is a matter of only a few days. Methods have been devised for separating these materials from crude rubber, but their chemical identification is not yet definite or complete.[1]

The antioxidants which are the subject of this investigation are synthetic organic materials that are unrelated to the natural antioxidants in chemical structure. They also are less effective than the natural antioxidants, since they are used in amounts of the order of 1 per cent, while the

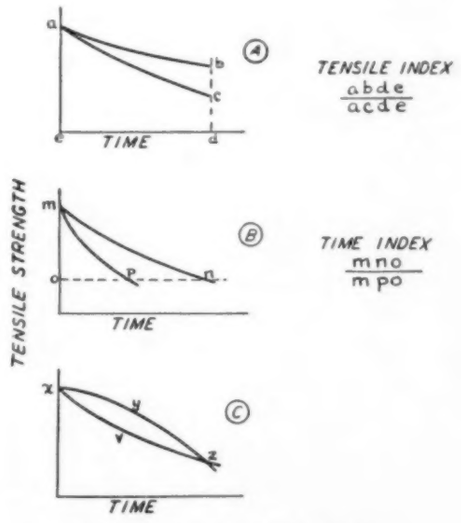


Figure 1.—Tensile and time indexes

This paper is reprinted from the June, 1935 issue of the Journal of Research of the National Bureau of Standards.

[1] H. A. Bruson, L. B. Sebrell, and W. W. Vogt, *Isolation of the natural oxidation inhibitors of crude Hevea rubber.* Ind. Eng. Chem. **19,** 1187-1191 (1927).

natural antioxidants in crude rubber do not exceed 0.1 per cent of the total.

In studying the behavior of synthetic antioxidants, rubber which contains the natural antioxidants was compared with the same rubber to which a synthetic antioxidant had been added.

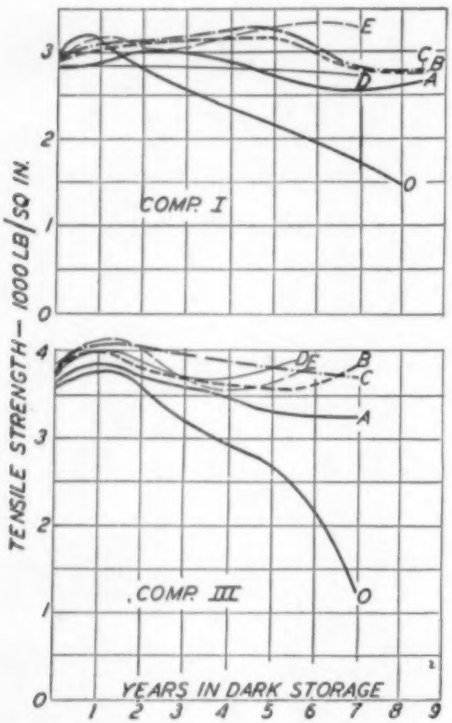


Figure 2.—Tensile-strength-time curves for compounds I and III under dark-storage conditions.

A complicating factor in the investigation is the fact that the substances investigated have other than purely antioxidant functions. Some of them are also accelerators of vulcanization, and consequently affect the optimum time of vulcanization and change the physical properties of a vulcanized compound. Conversely, some of the accelerators used in the rubber compounds served not merely to speed up the vulcanization reaction, but had distinct antioxidant activity as well. In order to evaluate these dual functions, antioxidants having varying acceleration activity and accelerators having varying antioxidant power were selected.

References to previous investigations may be found in a recent comprehensive review on the subject of the accelerated aging of soft, vulcanized rubber.[2] The contribution of the present paper consists of data pertaining not only to accelerated-aging tests, but also to natural life tests extending over as much as eight years. These data are interpreted so as to yield numerical factors expressing the improvement in tensile strength and the increase in the useful life of rubber which result from the employment of antioxidants under specified circumstances.

The antioxidants used in this investigation were selected from commercial antioxidants that were available when the work was begun. They were purchased under trade names, but are here designated by their chemical names. The identification was based on statements by the manufacturers or on information from other sources believed to be reliable.

No analyses were made of the antioxidants nor was their purification undertaken since the aim was to study the performance of the commercial materials when used in accordance with instructions furnished by the manufacturer.

A list of the antioxidants employed is given in table 1, together with information about their form, and the color which they impart to rubber. Inasmuch as the chemical names of the antioxidants are cumbersome, letters are given in this table, which will be used to refer to the antioxidants in the subsequent discussion.

TABLE 1.—*Antioxidants employed*

Designation	Antioxidant	Effect on light-colored rubber
A	Aldol-alpha-naphthylamine	Slight coloring.
B	Acetaldehyde-aniline reaction product	Distinct coloring.
C	Butyraldehyde-aniline derivative	Decided darkening.
D	Diphenylethylenediamine	Slight coloring.
E	Mixture of phenyl-alpha-naphthylamine, meta-toluylenediamine, and stearic acid	Decided darkening.

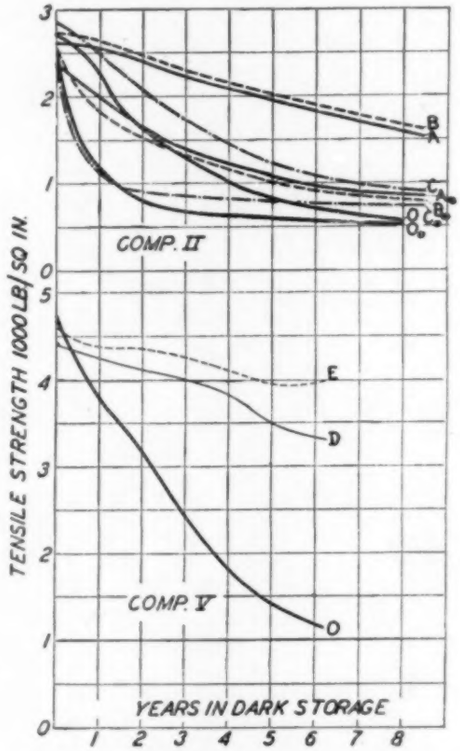


Figure 3.—Tensile-strength-time curves for compounds II and V under dark storage conditions.

Five rubber compounds were used. These were compounded at the Bureau, and were formulated with a view to representing widely different types of rubber compounds, and comprised the following: a simple rubber-sulphur mixing, a pure gum compound made with an ultra-accelerator, a whiting stock, a carbon-black tread stock, and a compound containing carbon black and reclaimed rubber. The accelerators were selected to show a range of antioxidant activity and included diorthotolylguanidine and diphenylguanidine, which are regarded as having no antioxidant activity, hexamethylenetetramine, which has moderate activity, and tetramethylthiuram disulphide, which markedly improves the stability of rubber. The formulas for the respective compounds are shown in table 2, while in table 3 the amounts of the various antioxidants used in each are given. As indicated previously, the latter proportions are based on recommendations made by the manufacturers at the time this work was undertaken.

The periods of vulcanization of the various compounds are shown in table 4.

[2] T. R. Dawson, *The Research Association of British Rubber Manufacturers*, Information Bureau J. **3**, 51-96 (May, June, July, and August 1934).

TABLE 2.—*Composition of base rubber compounds (in parts by weight)*

Ingredients	Rubber compounds				
	I	II	III	IV	V
Smoked sheet rubber	100.0	100.0	100.0	100.0	100.0
Sulphur	4.00	6.53	2.00	8.11	3.50
Zinc oxide	4.00	18.75	1.00	.....	5.00
Whiting	50.0	.....	.....	.....	.....
Carbon black (Micronex)	.....	34.85	.....	.....	40.0
"Mineral rubber"	.....	10.90	.....	.....	5.00
Reclaimed rubber	.....	38.10	.....	.....	.....
Palm oil	.....	6.53	.....	.....	.....
Pine tar	.....	.....	.....	.....	2.00
Diphenylguanidine	0.50	.....	.....	.....	.....
Hexamethylenetetramine	.....	1.00	.....	.....	.....
Tetramethylthiuram disulphide	.....	.....	0.25	.....	.....
Diorthotolylguanidine	.....	.....	.....	.....	1.25

TABLE 3.—*Amounts of antioxidants added, in percentage by weight of the rubber in the base rubber compound*

Antioxidant	Rubber compounds				
	I	II[1]	III	IV	V
A	1.0	1.0	1.0	1.0	None
B	2.5	2.5	2.5	2.5	None
C	1.5	1.5	1.5	1.5	None
D	2.5	None	2.5	None	2.5
E	2.5	None	2.5	None	2.5

[1] Reclaimed rubber was calculated as 50 percent rubber.

TABLE 4.—*Conditions under which samples were vulcanized*

Rubber compounds	Antioxidants employed	Temperature of vulcanization Degrees C	Periods of vulcanization Minutes
I	A, B, C, D, E	142	20, 30 and 50
II	A, B, C	145	25, 50, and 90
III	A, B, C	125	23
III	D, E	125	18, 23, and 28
IV	A, B, C	142	[a]
V	D, E	142	30, 37, and 45

[a] Several different periods were employed.

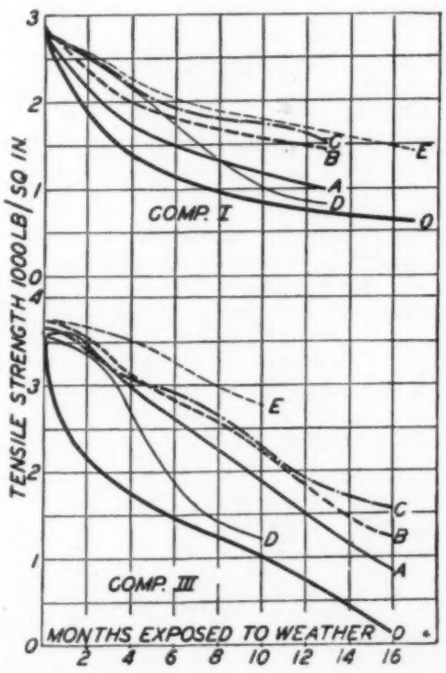


Figure 4.—Tensile-strength-time curves for compounds I and III under weather exposure.

When this work was initiated, the removal of from 5 to 15 per cent of the accelerator from a batch was suggested in order to compensate for the accelerating action of certain antioxidants. Additional mixes of compounds I and II, in which diphenylguanidine and hexamethylenetetramine were employed as accelerators, were made up with the elimination of a portion of the accelerators according to this recommendation. The results, however, did not differ materially from those obtained when the full amount of accelerator was used. With compound III, on the other hand, the addition of some of the antioxidants had the effect of producing considerably higher initial tensile strengths so that a comparison between a compound with and without an antioxidant was difficult. By deducting a portion of the accelerator, compounds of approximately the same initial tensile strength were obtained with and without antioxidants. Aging tests were made on compounds which had been altered in this way and on those which had not. In making comparisons, compounds having approximately the same initial tensile strength were employed.

In compound IV, the rubber-sulphur mix, the accelerating effect of the antioxidants was more evident, since it was not superimposed on the effect of substances which are primarily accelerators. The optimum vulcanizing time was altered so much by the antioxidants that accurate comparisons are difficult or impossible. The results are not here reported, though some general observations regarding them are stated.

The preparation of specimens with regard to both mixing and curing was done under conditions controlled to render the base compounds and the compounds containing antioxidants as nearly alike as possible, except in antioxidant content.

The test conditions were chosen so as to study the deterioration of rubber exposed to a variety of circumstances, including those of the familiar accelerated-aging tests. They comprised exposure to:

(1) Air at prevailing room temperature in a dark cabinet, (2) sunlight and weather, (3) air at 70° C, (4) air at 90°C., and (5) oxygen under pressure of 300 pounds per square inch at 60°C.

The dark-storage tests were made by suspending the samples in a cabinet located in a well-ventilated room. The sides of the cabinet consisted of black cloth, which permitted the circulation of air, but excluded practically all of the light.

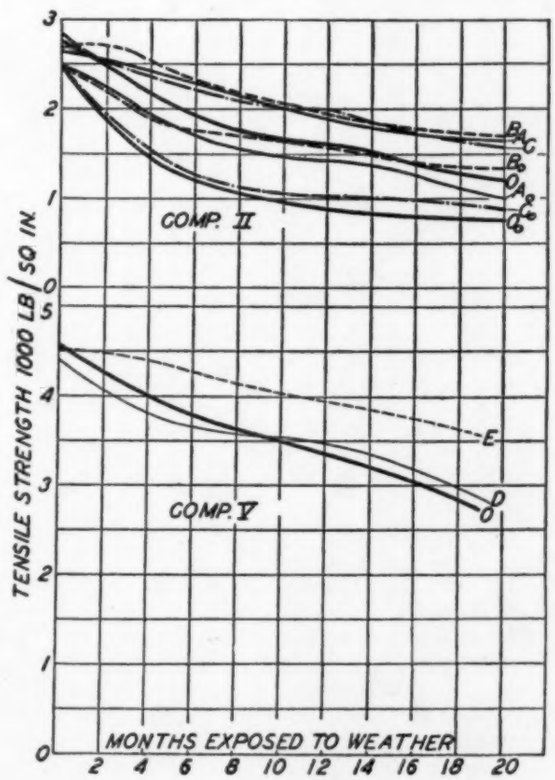


Figure 5.—Tensile-strength-time curves for compounds II and V under weather exposure.

The weather-exposure tests were conducted by hanging sheets of the various experimental compounds on racks that were placed on the roof of a building of the Bureau, which is situated in a suburban area. The sheets were suspended vertically in an east and west plane so that only one side was exposed to direct sunlight during most of the year.

The tests in air at 70 and 90° C were conducted in an electric oven in which the air was stirred by means of a fan mounted at the bottom. The introduction of fresh air into the oven was secured by convection through open ventilators.

The compressed-oxygen test differed from the test commonly required in specifications for rubber articles in that a temperature of 60° C was employed instead of 70° C. The bomb in which the test was conducted was made from an iron pipe about 8 inches in diameter and 12 inches in length, and was mounted in a thermostatically controlled water bath. No detailed record was kept of the number and kinds of samples that were placed in the bomb together. The volume of rubber introduced into the bomb at any one time did not exceed 3 per cent of the volume of the bomb. When tests were being made at different time intervals, all the samples required were placed in the bomb at one time, and some were withdrawn at intervals until the longest aging period was reached. The samples used for the bomb test were 3- by 5-inch strips from which dumbbell-shaped test specimens were subsequently cut.

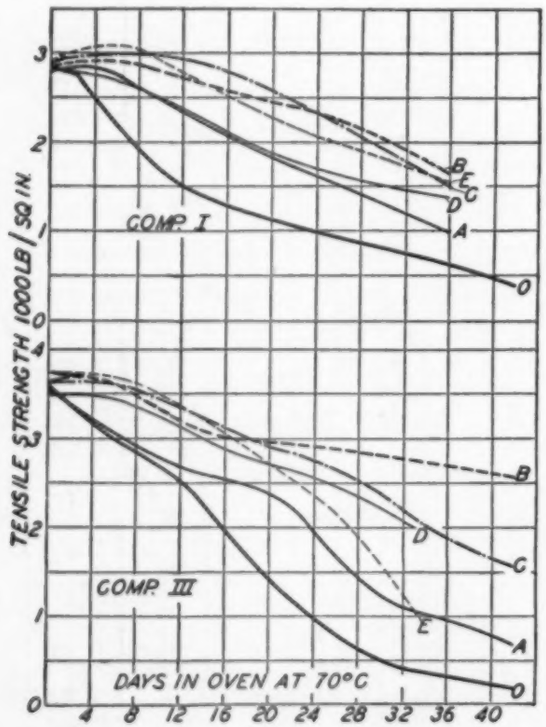


Figure 6.—Tensile-strength-time curves for compounds I and III exposed to the 70°C. oven test.

The accelerated-aging tests were completed in six weeks or less. The sunlight- and weather-exposure test in some cases extended over eighteen months. In dark storage most of the samples deteriorated slowly, and after seven or eight years several lots of them had practically their original tensile strength. The duration of the tests was sufficiently long in most cases to permit comparisons between different types of aging and to give data on the effectiveness of antioxidants.

In order to simplify the presentation of results, measurements have been averaged wherever practicable. In some instances the measurements for different cures are averaged. In others, only the measurements at optimum cure are given. In condensing the bulk of data, care has been exercised not to average measurements in a way that might

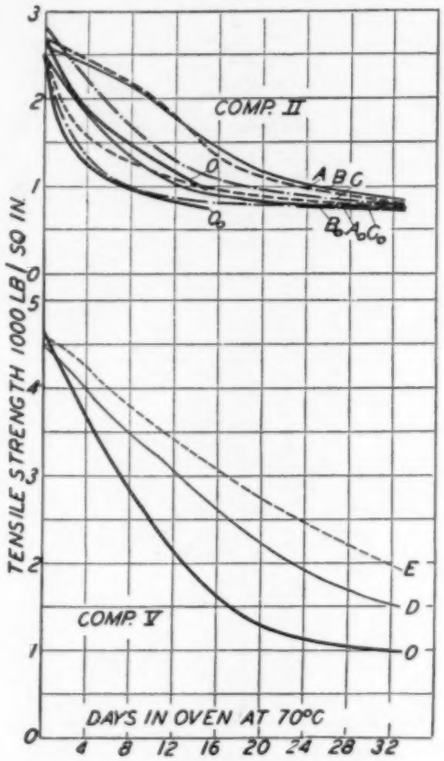


Figure 7.—Tensile-strength-time curves for compounds II and V exposed to the 70°C. oven test.

obscure trends or affect the conclusions. For compound II, the results are expressed as the averages of the measurements at the two shorter periods of vulcanization in one group and those at the longest period in another.

The results are presented graphically in figures 2 to 11. Each figure refers to one condition of aging and consists of two groups of curves representing two different compounds. The ordinates represent the tensile strength and the abscissas the time of aging.

(Editor's Note: In figures 2 to 11, in which the results of these tests are given graphically, the letter O indicates base compound (no antioxidant); the letters A, B, C, etc., refer to antioxidants listed in table 1; and the subscript o indicates an overcured compound.)

The mass of data presented is too great to admit of simple or easy interpretation by the usual method of making a visual inspection of the curves. This difficulty is accentuated by the fact that the curves are irregular and do not conform closely to any simple or well-defined shape. For this reason quantitative means of evaluating the effect of antioxidants were devised on the basis of comparisons of certain areas under the aging curves of compounds made with and without antioxidants, respectively. The improvement in tensile strength is called the *tensile index*, and the increase in the useful life is called the *time index*.

These indexes are intended simply as practical expedients. They are not precisely determinable numbers, nor do they have any fundamental physical significance.

(Concluded in the next issue)

An effective five-piece window display featuring Seamless Rubber goods.

Displaying Rubber Products

Survey Reveals Wide Use of Assorted Display Materials Adopted by Rubber Manufacturers to Promulgate Wares

By M. E. Lerner

TYPES of display material used by rubber manufacturers producing goods for consumer consumption run the entire gamut of styles available, ranging from simple paper streamers to elaborate, tricky displays. To attempt to discuss or describe all of the varied types adopted by the manufacturers to further the possibilities of consumer purchase of their wares would approximate the impossible. Therefore, for the purpose of this article, we have selected the material used by a few leading producers of rubber articles, a discussion of which will serve as a cross-section of the widely diversified material in use.

There are three methods of display in the retail store, these being counter, floor and shelf. Another method which supplements these three, and an important one, is window display. Merchandising experts are agreed upon the importance of display. Although in the long run only product performance (and price) is the deciding consumer reaction to the worth and value of any article, yet in the field of competitive goods proper display is often one-half the sale. We are not referring at this time to the display value of the package containing the rubber article offered for sale, but to the display of the packaged product.

The self-display carton finds wide application in the rubber industry as exemplified by the Jenkins Bros. tape carton above.

Display material lends itself not only to diversified lines of rubber sundries but to tires and tubes, and even to automobile accessories. Because of their bulk it is natural that tires be displayed in or on metal stands of one type or another, but it is also possible to present even such bulky articles to the consumer eye in a neat and attractive manner. The following descriptions of display materials currently in use will best answer questions as to the type of display suitable for the myriad of articles produced by the rubber industry at large.

The Faultless Rubber Company is a firm believer in the value of display. Faultless supplies its dealers with two separate types of display material, one being colorful paper displays which may be pasted on retail windows or suspended within the interior, perforations at the top being provided for such purpose; the other being counter or window display boards, lithographed in red and black against a solid yellow background. This latter type of display is equipped with simple easels at the back which are readily folded so that it becomes a stand against which the display rests in an upright position.

These two types of display featured by Faultless are used for its Wearever line. Water bottles, syringes, nipples, beach balls, and other Faultless items are covered by them. Each display is devoted to one single item, and in every instance the item is reproduced in its original color on the display. Sales features of the item are also included on each display with the more important points given due emphasis by being placed in larger type, in color, and other indications.

At present Faultless is using lithographed cardboard displays in connection with its campaign on its Wonder Nipple line. Advertising in such publications as the Ladies' Home Journal, Woman's Home Companion, and similar consumer magazines, describes the advantages of these nipples. At the bottom of these advertisements is a note urging interested parties to write to the company

Miller is using this collapsible floor display which tells a complete story of available items.

for a free nipple. Faultless has tied this campaign up with its dealers by furnishing them lithographed easel-type displays on which is reproduced the advertisements appearing in the consumer magazines mentioned which urges the consumer to bring one of the advertisements "to this store for redemption" with a further notation on the display that "we are authorized agents for the Faultless Rubber Company."

But in this instance the display performs a double task. The front is intended purely for consumers, but on the back is printed a message to the dealer. Under the title "What to tell your customers about Faultless Wonder Nipples" there are 11 sales points mentioned. Suggestions for the sale of 3 to 6 nipples at a time rather than a single nipple are also made on the back of this display card. And to complete the force of the display Faultless pastes a little booklet on the back in which dealer prices are quoted. For counter use Faultless supplies these double-purpose displays in a 12 x 16 inch size, while for window display an 18 x 24 inch size is available. Faultless also supplies its dealer trade with paper banners from time to time carrying the Wearever trade name generally accompanied with a "buy now" theme.

The Seiberling Latex Products Company, makers of a wide and varied line of rubber sundries, as well as a diversified line of Mickey Mouse rubber play balls and other novelties featuring Walt Disney characters, such as the Three Little Pigs, Pluto the Pup, and the like, furnishes dealers with colorful paper strips and banners for pasting on windows and interiors. Generally these banners are printed or lithographed in black, red and yellow, and contain reproductions of the fanciful characters featured on the merchandise offered for sale. These banners are known as "teasers" and are intended to attract attention to the merchandise on sale within the store.

Seiberling Latex is currently using an attractive six-piece window display for its rubber sundries line, all six pieces being of the easel display type. The center piece is a large 18 x 29 inch display card the feature of which is an attractive woman holding a hot water bottle in her hand, with the simple wording—Seiberling for Hygiene and Health in Every Home—together with full corporate name and address at the bottom, the entire picture being placed against a deep black background and set off with an attractive stepped-up frame. Beneath this larger center piece a small 18 x 5 inch placard is placed conveying the message that the store is "Headquarters for all Sundry Rubber Goods."

On either side of the center piece two smaller 13 x 24 inch display cards are placed, one featuring hot water bottles and the other fountain syringes. Both of these cards have 8 x 15½ inch angular cut-outs into which actual bottles and syringes are placed leaning against the easel in the back to maintain an upright position. The remaining two pieces, both 13 x 8¾ inches in size, are placed at the extreme ends of the entire display, one simply stating "Seiberling Rubber Sundries" while the other lists various Seiberling sundries including shower caps, ice bags, household gloves, tubing, etc.

Each of these six display pieces follows a definite de-

for YOUR TOUCH-UP and REPAIR KIT
for 101 HANDY USES
FRICTION TAPE
for PATCHING ALL SOFT RUBBER ARTICLES
for EMERGENCY TIRE REPAIRS
HIGH LUSTER TOP DRESSING

General groups a number of related items on a single display piece for dealer convenience.

sign, although different color arrangements feature each one. All of them contain the "Hygiene and Health" theme stressed by the larger center piece. Pictorial instructions are contained on the back of the center piece for the dealer to follow in setting up the display, which was produced by the Milprint Products Corporation, of Milwaukee.

For the promulgation of its improved line of hot water bottles during the late Summer and Fall the B. F. Goodrich Company has adopted a style of display equally suitable for window or counter display. The Goodrich rubber bottles are packaged in an eye-appealing two-piece box covered with Cellophane. Five separate display pieces are provided which may be used as a unit or individually, lending themselves to both purposes. Four of the displays are of the same design and construction, each featuring the Goodrich trade-name prominently. The fifth display, used as a center piece when the five individual display cards are used as a unit, is slightly taller than the others. The cards are supported by back easels when used.

In addition to the easel device, each of the cards is equipped with a slot contrivance at the upper top of the back into which an actual packaged hot water bottle slides,

with cover removed so that the product itself is open to display. Price tags, which are slit in such wise that they slide firmly over the mouth of the rubber bottles, are also provided. In addition to these display cards Goodrich also furnishes dealers with paper banners featuring such statements as "Just Arrived—Goodrich Rubber Goods" and "Sale—Goodrich American Made Quality Rubber Goods," and others. The display cards are adaptable for use in regular front windows or corner windows, in addition to use on counters and tables. Goodrich urges its dealers to tie up window displays with interior displays.

For the Summer and Fall the Miller Rubber Company, Goodrich subsidiary, one of the believers in novelty displays, is using a large size collapsible floor display which provides its own shelf for rubber goods display. Made in the form of a sales table the upper portion of the display is devoted to featuring the three brands of Miller hot water bottles—Cameo, Standard and Lakeside—with three samples displayed in open packages above which prices are plainly and prominently marked, with two-line sales points stressed, such as "High Quality—Guaranteed," "Strong, Durable—Guaranteed," etc. In front of the packaged hot water bottles a variety of Miller rubber merchandise, sponges, ice caps, bulbs, and the like, may be placed, either in a neat arrangement or strewn about to represent a sales counter. The bottom part of this display, or the stand, carries a printed list of Miller sick room supplies and Miller household requisites, neatly arranged in two long separate columns.

Last season Miller featured a "rubber tree," a cardboard display lithographed and then die cut to resemble a tree with leaves and "branches." On these "branches" were suspended such Miller rubber merchandise as household gloves, ice bags, tubing, etc. These "branches" were actually wooden dowels inserted in die cut holes. Around the base of the "rubber tree" was placed additional Miller merchandise generally at the discretion of the dealer.

Adjustability is an important feature in this U. S. Rubber Gaytee's display for window use.

Another example of how packaged rubber merchandise may be treated from a display standpoint is found in the sundry display furnished by the Seamless Rubber Company, Inc., to its retailers. The display consists of one large easel and four small ones, the large easel carrying a general sales message, i.e., Here are Amazing Values in Pure Rubber Goods—while the others carry specific mention of hot water bottles, fountain syringes, household gloves, and the like. The Seamless color scheme of a buff background, brown lettering, and red SR discs is used on all of the five pieces in this display unit. Specimens of actual merchandise are ranged before these display pieces at the dealer's discretion, with the company suggesting a symmetrical appearance for the finished display.

As a general rule the display of rubber overshoes is restricted to front and corner windows, rather than interiors. Often show cases are used by shoe retailers in front of their establishments. Because of the nature of the product practically all shoe displays have some arrangement for the presentation of the actual merchandise, as exemplified by display material used by U. S. Rubber for their Keds and Gaytees.

The current Gaytees display, which is loaned by the company to meritorious department stores and retail shoe outlets, for window display, is 5 x 5 feet in size. Light blue in color, the display features a series of four panels. In the center of each panel is the picture of a famous Parisian dressmaker each of whom has publicized approval of Gaytees from a fashion viewpoint, such as Le Monnier, Vera Borea, and others, the names being painted under each panel. In the evening each of these four panels is illuminated with a light bulb, making for a striking display.

On a large circular disc to the right of the four panels, which are ranged one below the other, are the words—Paris Gaytees. The balance of the value of this display is left to the Gaytees themselves which are ranged to the left of the panels in stepped-up formation, and to the right in similar style. A variety of other ideas for the display of the Gaytees may of course be used with a display of this type, depending upon the retailer's choice. The various pieces of the display, which are assembled in a case for shipping purposes, are adjustable to permit their use in both large and small windows.

A "Deluxe" display is used for U. S. Keds, consisting of four panels measuring 43″ high by 63″ wide in all, each panel being about 16″ wide. It is made of cardboard lithographed in seven colors. For the actual display of Keds six shelves are provided, each shelf being held in position by a slot arrangement in the panels. The only lettering on this panel display is "Keds—the Shoe of Champions." For use in conjunction with the "Deluxe" display U. S. Rubber supplies four cut-out letters spelling "Keds," under each of which is a short sales message in the form of an opened book. Each letter also features a figure of sport, such as a runner, baseball player, tennis enthusiast, and swimmer, indicating the many uses of the product. Each of these letters is 26″ high by 15″ wide, and is printed in bright orange for purposes of visibility. U. S. Rubber provides these cut-outs so that they may be adjusted to the size of the win-

Goodrich's material for either counter or window display of its hot water bottle line effectively combines merchandise and price.

dow wherein the panel display is used, the cut-outs being used for background effect.

An interesting display piece was devised by the Davidson Rubber Company in introducing its No-Colic Screw-On Nipple, the basic feature of which is a heavy firm rubber base molded as an integral part of the nipple proper, this base carrying internal screw threads by which the nipple is screwed to the bottle, the neck of which is also threaded. To promote the sale of this new style nipple and bottle Davidson furnished a display card, lithographed in several colors. Featured on the display is a large giant-size reproduction of the nipple and bottle neck, which instantly conveys to the consumer the claimed advantage of the new style. Four standard packages of the Screw-On Nipples, containing three nipples each, are inserted in the front of the display piece, while an actual nursing bottle with nipple attached (or screwed on) is at the extreme left. The invitation "Pick it up—see how easy it works" is given prominent space on the display, as is the "3 for 25c" price.

Combining Related Items

For counter and window display of its tire accessory products line, including friction tape, patching cement, tire repairs, etc., the General Tire & Rubber Company is using a cardboard display piece featuring the individual products themselves. The friction tape, patching cement and rubber patch for emergency tire repairs, are all attached to the front of the display by various means such as a circular band around the tube of cement which is slotted through to the back of the display. The bottom of the display bends up slightly to form a shelf several inches above the counter or window surface, on which the General combination tube repair kit, high lustre top dressing and touch-up lacquer packages are placed. Large white arrows point to each of the six products on the display, in the center of each of which mention is briefly made of the individual product's purpose.

One of the most used types of display in the rubber industry (and practically all other industries featuring consumer merchandise) is the self-display carton, the cover of which generally folds back to form a display. Fanciful displays in these cartons are achieved by means of die-cutting the covers so that when they fold back various display shapes are formed. This type of self-display lends itself to friction tape, jar rings, rubber heels, and similar items packed in carton form. Examples of such displays are frequent throughout the rubber industry, but we cite, as an example, the Gold Seal Friction Tape carton of the Rubber Division of Jenkins Bros., Bridgeport, Conn., which contains 24 individual packages, this carton having a cut-out cover which folds back to form a counter display.

Window display of tires is left to the discretion of the individual dealer as a rule, although tire manufacturers generally furnish display units such as strong cardboard "cradles" to hold the tires, and cut-out letters which may be arranged to suit the particular window.

Other Types of Display Materials

There are, of course, a goodly number of other types of display material used by rubber manufacturers to promulgate the sale of their respective products. For instance, the I. B. Kleinert Rubber Company furnishes dealers handling its merchandise with a Rubber Chart on which is pasted five squares of rubber in an A, B, C, D, E formation, each approximately 4 inches square, indicating the process rubber undergoes before being used in the manufacture of Kleinert merchandise, ranging from a piece of a sheet of crude rubber to a piece of milled rubber after it has been applied to a base of silk and vulcanized. Another example is a beautifully lithographed poster furnished by the Seiberling Rubber Company featuring a full length portrait of an attractive woman, the only advertising consisting of "Seiberling Rubber Heels—For Him—For Her" at the bottom of the poster. There are endless other examples that may be cited.

This Davidson display leaves no consumer doubt as to the product offered for sale.

Too often in the selection of display materials for rubber goods is price given paramount importance by the manufacturers. There are countless instances on record as to the value of proper display material in furthering sales. Rubber manufacturers would do well to give much more attention to their display material from other standpoints than price. The use of many colors does not, in itself, comprise a good display piece. The invitation it extends to the consumer to come closer, see and buy is the primary point of any display. Novelty in a display generally accomplishes this purpose. Proper attention to this formula may serve as an excellent pointer to increased sales.

New "Stretchable" Lacquer Finish

FLEXIBILITY, stretchability, and adhesion are the three most important characteristics of lacquer finishes for use on rubber. A new "stretchable" lacquer finish, claimed to rival the flexibility and distensibility of rubber itself, has been developed by the Research Laboratory of the Roxalin Flexible Lacquer Company, Inc., of Elizabeth, N. J.

Tests conducted on this new lacquer showed that when applied on a piece of live rubber, and both stretched to the limit, the finish remained intact. When the rubber was allowed to return to its normal condition the finish did not flake off or show a ribbed surface which would indicate a loss of bond or adhesion, according to Roxalin technologists.

This "stretchable" coating is furnished in a clear and metallic-like aluminum color; can be readily applied by dip, spray gun or roller coating; and, using any of these application methods, can be coated on uncured rubber and subsequently vulcanized with it. Finishes of this type are of especial interest to manufacturers of rubber balls, bathing suits, hot water bottles, galoshes, kitchen sink mats, automobile front floor covers, and similar articles.

Latex Coated Kitchen Accessories

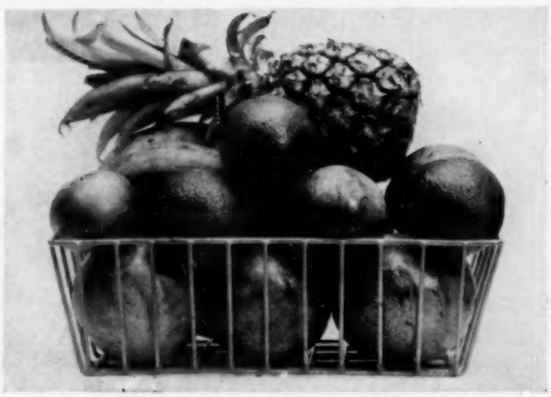
A COMPLETE line of latex coated kitchen accessories has been added to the myriad of products manufactured and merchandised by the United States Rubber Company. These products, sold under the trade-name of "Chipless," are being handled by the Naugatuck Chemical Division, and were first introduced to the household trade at the New York Housefurnishings Show, held at the Hotel Pennsylvania, in New York City, from July 10 to 19, inclusive.

To date the Chipless line features nine individual items for kitchen use, including three varieties of drain board racks. The other items are a dish drain basket, egg basket, fruit and vegetable basket, dish pan rack, pot lid rack, and soap dish. All of these products are of rubber-covered wire construction and are available in three colors, i.e., green, red and ivory. Other kitchen accessories will be added to the line at a later date.

Claims made for the Chipless line include the following: they do not rust, are easy to clean, and do not chip or mar enamel or porcelain; they are quiet, will not slip, and wear well. Of the nine items, seven are designed for use around the kitchen sink, the remaining two—egg basket and fruit and vegetable basket—being primarily intended for refrigerator use.

The majority of Chipless kitchen accessories enter a competitive market, although a few, such as the egg basket and dish pan, are new products, at least for distribution by rubber manufacturers. All of the products lend themselves to retailing through the usual kitchen accessory channels, viz: hardware stores, variety shops, department stores, and similar retail outlets.

From the larger of the two accompanying photographs it will be noted that the drain board racks differ from current styles in that they are constructed with two separate "aisles" for the dishes to be inserted, the largest of the Chipless racks holding 24 plates. As may be seen from the same pictorial illustrations the lid and cover holder may be suspended at almost any point near the sink. The same photograph also shows the applications of the latex coated dish pan and soap dish.



A wide variety and quantity of fruits and vegetables fits in this latex coated basket for refrigerator use.

The two items for refrigerator use, one of which is pictured here, are similar to the familiar wire baskets, with the important difference that they are latex coated. The egg basket comfortably and safely holds one dozen eggs, while a variety of fruit and/or vegetables will fit snugly into the designated basket.

According to the Naugatuck Chemical Division, the Chipless latex coated kitchen accessories have met with good response from the various retail channels, and bid fair to occupy an important niche in the manufacturing operations of the parent company.

A group of U. S. Rubber's Chipless latex coated kitchen accessories, including drain board racks, dish drainer, lid and cover holder, dish pan, and soap dish, all of them arranged in their proper places around the sink.

John R. Gammeter—Inventor

THAT opportunity may come even to wheelbarrow-pushers is exemplified in the life-story of John R. Gammeter, native-born Akronite. While occupying that position for the B. F. Goodrich Company in 1896, his first commercial employment, Gammeter decided that there must be a better method of trimming rubber stoppers than by the use of knives and shears wielded by girl employes.

Therefore, from a discarded metal junk heap, he gathered a few metal parts, "borrowed" some rubber stoppers, and set to work. He was literally forced to exhibit his rubber stopper trimming machine to his superiors when called on the carpet for "borrowing" the stoppers.

In such wise did Gammeter conceive his first invention. Goodrich recognized this wheelbarrow-pusher's ability, and set him to work devising labor-saving devices. In the course of the next thirty years he applied for and received patents on more than 250 contrivances, ranging from a bicycle tube making machine to pack parachutes for aviators. The rubber-threaded golf ball is one of his more noted achievements.

He has traveled widely in the interests of Goodrich. Even now negotiations are under way between Gammeter and the Soviet Union for the installation of a latex-dipping factory. He is familiar with such work, having supervised installation in foreign plants heretofore.

After thirty years of service with Goodrich he retired in 1926, at the age of 50, to devote himself to private work and consultation, and also to obtain more time for his personal pleasures, particularly in cultivating his 4,000-acre game preserve near Sandusky (Ohio) where he raises pheasants and other game "just to let them live." Hunting with several favorite dogs is his particular delight, though he is known to do most of his "hunting" with a camera.

Today, at the age of 59, John Gammeter still maintains several laboratories in and around Akron, including one at his 680 N. Portage Path home. He is constantly entertaining noted technologists and is keenly interested in new developments. One of his new pleasures is a one-wheel automobile trailer, equipped with General streamline Jumbo, Jr., tires, which can be hooked on to the rear of his car in short order.

Although he is known as the U. S. Patent Office's best customer, having had awarded to him more patents than any other individual, Gammeter now invents something "only when I need money." He has no financial worries, however, since in his own words: "I pay a man to do my financial worrying for me." He is content with the job he has done, keeps abreast of current developments, and is actively associated with such fraternal organizations as the Masons, Elks, and others.

A Chlorinated Rubber Paint

AN IMPORTANT development in the paint field has been announced by the Harrington Paint Company, Inc., of East Cleveland, Ohio, whereby the protection of ferrous-metal surfaces against the destructive action of oxidization is achieved through the use of the oxide coating itself. Instead of requiring hours of labor for its removal, the rusted surface becomes an essential part of the protective coating, forming a light-proof color body that is said to be unusually resistant to the action of acids, alkalis, and the destructive forces of nature.

This new paint is made still more positive in its protective qualities since it is made on a Tornesit base, which in itself shows approximately 99% proof against moisture penetration, according to the Harrington company. Tornesit (a chlorinated rubber made by the Hercules Powder Company) provides a base which forms a non-inflammable and tough film with good adhesive power.

As has already been noted, the removal of rust is not only unnecessary but also undesirable, a fact which in itself constitutes a saving. Coupled with this is a rapid drying rate, ease of application and long life under adverse conditions, all making for economical protection of property. Weathering improves rather than deteriorates the quality of the paint as each fresh contact with water or moisture regenerates the protective elements of the coating. This regeneration has been observed in coats three years after application. Sunlight likewise has a beneficent effect upon the painted surface.

The new paint is said to make an excellent priming coat (or even finishing coat) that can be covered either with a special "Tornesit Clorruber" paint made by Harrington, or any other type of paint. Being equally resistant to acids and alkalis, oils and oil fumes, and being improved by salt or fresh water, the new paint should find ready application where ferrous-metal structures are used.

Gatex—A Flat Belt Drive

IMPORTANT changes have taken place in late years with respect to systems of transmission. Major progress has been made in what is termed the short-center drive field in which the V-type of rope has become popular because of the absence of a flat belt of equal driving capacity to compete with it, according to *Mechanical World*. New types of flat belts, however, introduced in recent months, which combine a high coefficient of friction with flexibility are readily being adapted in industrial factories.

One such flat belt is "Gatex," a product of George Angus & Company, Ltd., of England, which is woven from "Filastic" yarn by a newly patented process. The exclusive feature in the construction of this flat belt is in the intimate blending of latex with cotton in a manner to form a tread consisting of rubber and cotton in equal parts. Each individual fibre of cotton is separated from the next fibre by a rubber coating, thus avoiding friction between the fibres. No plies are involved in the construction of Gatex which is woven solid and vulcanized.

There are two excellent reasons for the elaborate insulation provided by this new belt, i.e., effective waterproofing is secured by the encasement of both the minute fibres and the numerous cables of fibres which is an advantage in damp and exposed working conditions obviating the possibilities of shrinkage, and, second, it minimizes the effects of high temperatures and renders the material immune from chemical fumes as well as oily substances. Gatex is woven endless in sizes up to 20 inches wide by 70 feet long. Its breaking strain is said to be approximately 2 tons per square inch.

Section of a Nu-Gripped tire

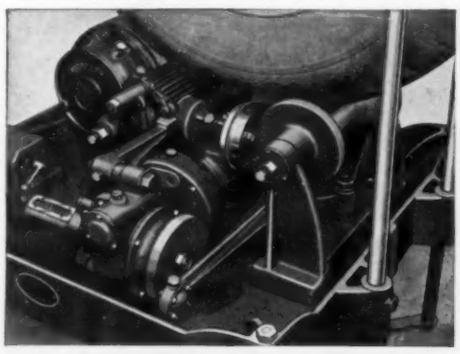
Bendix Nu-Grip Safety Process

Machine Developed by Engineers Makes Possible a New Tire Tread Process for Better Road Contacts

WITHIN the next few months, possibly sooner, a new precision machine intended to add extra safety to tires against skidding possibilities, will be placed in the hands of selected service stations by the Bendix Products Corporation, of South Bend, Indiana. These machines, first introduced several months ago in England, France, Italy and other European countries, have been specifically designed to meet the requirements of American automobile tires, and will be known as Bendix Safety Nu-Grip Machines.

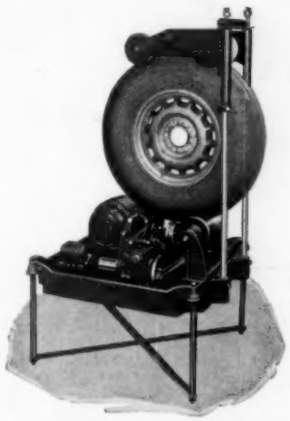
The new tire tread process, which is not a grooving or retreading operation, is a treatment of tires by which a better contact between the tire tread and road surface under varied weather conditions is secured, thereby materially reducing the slipping and skidding of tires, major causes of the annual traffic toll, according to Bendix. The application of the Nu-Grip process is said to produce a better road gripping condition, create greater safety, and increase braking efficiency.

Briefly, the Bendix Safety Nu-Grip method consists of cutting a series of fine slots transversely on the tread of the tire along its entire circumference. Any tendency of the tire to slide on application of brake pressure causes the semi-flexible sections between the small slots to spread out and their edges to cut through watery road coverings, and through grease and oil films, sleet and snow, and to contact the road surface with added friction similar to the friction obtained when an ordinary rubber window squeegee is drawn downward across a wet, slippery pane of glass. The slots made by the Nu-Grip machine are 1/16 of an inch wide, by 3/16 of an inch deep, and may be made on any pneumatic tire where the tread has not been too closely worn to the fabric. According to Bendix estimate, an average of 12 minutes is required to Nu-Grip each individual tire.



Mechanism of the Bendix Nu-Grip Process Machine which has an automatic adjustment to fit tires.

One important factor of the Nu-Grip method is in the small width and depth of the slots cut, which are spaced 1/4 of an inch apart. Since the depth is only 3/16 of an inch the average tire, which has approximately 15/16 of an inch of rubber designed to wear away in use, may be Nu-Gripped five times. The 1/16" width does not depreciate the side-holding qualities of the average standard tire tread, nor does it permit stones, pieces of glass, and like substances, getting into the openings, or remaining there if they do enter. It is estimated that it will take approximately 9,000 miles running to wear down the 3/16" of surface cut. Bendix engineers also estimate that tire skid prevention is stepped up 60% or more with the Nu-Grip process.



A full view of the Nu-Grip machine which makes possible a new tire tread process.

The machine that makes possible this new method is operated by a small electric motor, with little mechanism, and but two adjustments. The feed arrangement is such that it automatically adjusts itself to any size tire, which does not have to be removed from the wheel. Its operation is entirely automatic. An aperture is provided for the occasional insertion of an air hose to blow the accumulated rubber dust out and away from the machine into an easily collected heap. A shoulder on the circular saw in the machine is set permanently so that the maximum cut cannot exceed 3/16ths of an inch, although a cut of less depth may be made by simple adjustment.

When the Nu-Grip machines are completed and ready for operation they will not be sold by Bendix, but will be supplied to service stations under a licensing agreement involving a franchise fee, plus a royalty paid monthly based on the volume of business accomplished. Bendix stresses the point that its Nu-Grip cutting does not interfere with the business of retreading, and will urge motorists to take advantage of the process not only for retreaded tires, but also for new tires so that its tread qualities will be improved and furnish extra safety against slipping and skidding.

Goodyear "Plioweld" Rubber Lining

ANNOUNCEMENT has been made of a new rubber lining for metal tanks by the Goodyear Tire & Rubber Company, Akron. The lining, termed "Plioweld," protects tanks against the action of acids and corrosive liquids. Important in the new development is the fact that the

adhesive with which Plioweld is applied to tanks, is a rubber derivative, applied to the clean metal which actually welds the resilient rubber to the metal during the process of vulcanization. The adhesive itself is a corrosion resistant material affording added protection in the application. The Goodyear adhesive which is used in the application of the rubber lining to the tanks offers another new development feature worthy of note, in that it is dissolved in a non-toxic solvent so that hazards to workmen making the application are avoided. The usual thickness of the new lining is three-sixteenths of an inch, and the product is applicable to all shapes and sizes of tanks made of wood, steel, aluminum and lead. It is said to offer these advantages: effectively sealing in most corrosive liquids, hot or cold, preventing tank leaks, corrosion and waste; will not oxidize nor slough off; it will not crack nor buckle under alternate drying and wetting.

Rubbone—An Oxidized Rubber

IN THE PAST manufacturers have gone to great lengths to prevent the rubber used in their products from oxidizing for apparent reasons. In the last few months, however, Messrs. H. P. and W. H. Stevens have discovered that an oxidized rubber may find application as a constituent for paints, varnishes and enamels, as well as other uses, particularly for electrical insulation in the impregnation of coils and the like. This discovery was made while experimenting with processes to further the use of rubber in paints. As a result of these experiments a standard procedure has been developed for the production of a material which is capable of oxidation and of thermosetting. This material has been named Rubbone, and was patented by the Rubber Growers' Association, of England (B.P. 417,912) under whose auspices the Stevens' experiments were conducted.

Rubbone is produced as follows: a solution of milled blanket crepe in white spirit is made by dissolving 20 parts by weight of rubber in 80 parts by weight of solvent, adding ½ part of cobalt linoleate and aerating at 80° C. until a sample drawn off from the bulk shows a quick separation of sediment and a clear supernatant solution of the resin. The solution is clarified by "tanking" or centrifuging and is then distilled by steam or in vacuo to separate the resin.

The new material, which approximates to $(C_5H_8)_2O$, is a clear, sticky amber semi-solid of the consistency of thick treacle, *i.e.*, it will flow at normal temperatures. On exposure to air it hardens slightly on the surface which becomes non-tacky and solid. On heating Rubbone becomes more fluid and is quite fluid at 100°C. Maintained at temperatures above 100°C. a thermosetting takes place through the mass at the same time that oxidization proceeds on the surface exposed to the air. Heating for 24 hours at 140°C. is necessary to fully set the resin so that it becomes insoluble in white spirit, etc. At 200°C. it sets in 1½ hours, although liable to porosity, whereas at 100°C. it requires 50 hours.

Hydrogen Sulphide from Rubber

SEVERAL tests have been conducted over a period of years by the Bureau of Standards, Department of Commerce, to determine the evolution of hydrogen sulphide from rubber during and subsequent to vulcanization. Early findings have been previously reported.* Latest tests by the Bureau have shown that the quantity of hydrogen sulphide evolved is dependent on its concentration in the rubber. This determination is demonstrated by two vulcanization experiments which were conducted with a stock consisting of fine Para rubber, 68 parts, and sulphur, 32 parts, by weight.

In one experiment a weighed sample was cured in a vulcanizing press at 148° C. (298° F.) in the form of a sheet about 1 mm. thick and 250 mm. in diameter. The sample was protected by aluminum plates so that only the 1-mm. edge was exposed to the air. The sample was removed from the press at intervals and weighed, along with the aluminum plates which adhered to it. A relatively small and progressive loss in weight was observed, which, on the basis of other work, was taken as being all hydrogen sulphide.

At the conclusion of the experiment the aluminum plates were stripped off and the sheet of hard rubber was heated in air at 95° C. (203° F.) under a fan for one-half hour to drive off any hydrogen sulphide dissolved in the rubber. The loss in weight resulting from this treatment was only 0.025 per cent of the weight of the sample.

In another experiment a sample of the same stock was extruded in a layer about 1 mm. thick on No. 12 aluminum wire. Vulcanization was conducted at 148° C. in a stream of inert gas, and the hydrogen sulphide determined by absorption in alkali as in Research Paper RP464.

The results of the two experiments are given in the following table:

Time (hours)	Total Hydrogen Sulphide Evolved: Sample in Press	Sample in Stream of Inert Gas
	Per Cent.	Per Cent.
1	0.003	0.031
4	.020	.47
11	.030	....
22	...	1.58
25	.045	...
26	...	1.85
32	.099	....
40	.188	....
47	.295	...
50	....	3.06

A comparison of the second and third columns of this table indicates that much less hydrogen sulphide is evolved when hard rubber is vulcanized even in a partially inclosed space than when it is vulcanized in a stream of gas in which the hydrogen sulphide is swept away as fast as it is formed.

* BS J. Research 4, 501 (April, 1930) RP162 and 9, 163 (August, 1932) RP164.

New Equipment

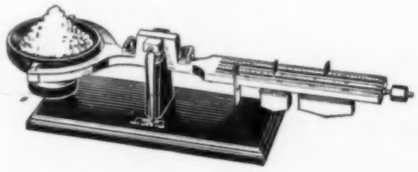
Brown Air Operated Controllers

A NEW and complete line of recording and indicating air operated controllers for temperature, flow, pressure, and liquid level, has been introduced by the Brown Instrument Company, Philadelphia, Pennsylvania. The

outstanding of these instruments is the Brown "Air-o-line," illustrated herewith, a controller with 1 to 150% throttling range and automatic reset. Simplicity marks the method for "tuning in" the controller to the specific process characteristics without interruption to automatic control, both throttling range and automatic reset dials being instantly adjustable with a screw driver without the necessity of removing the chart plate. In the new line indicating and recording thermometer-type temperature controllers are available for temperatures within limits of —40° F. and +1200° F. Potentiometer-type controllers are available for temperatures within limits of —300° F. and +3400° F. Indicating and recording pressure controllers are available in ranges from 30" vacuum to 3000 lbs. per sq. in. pressure. An "On-Off-Controller" for two-position service is also included in the new Brown line.

Bennett Laboratory Balance

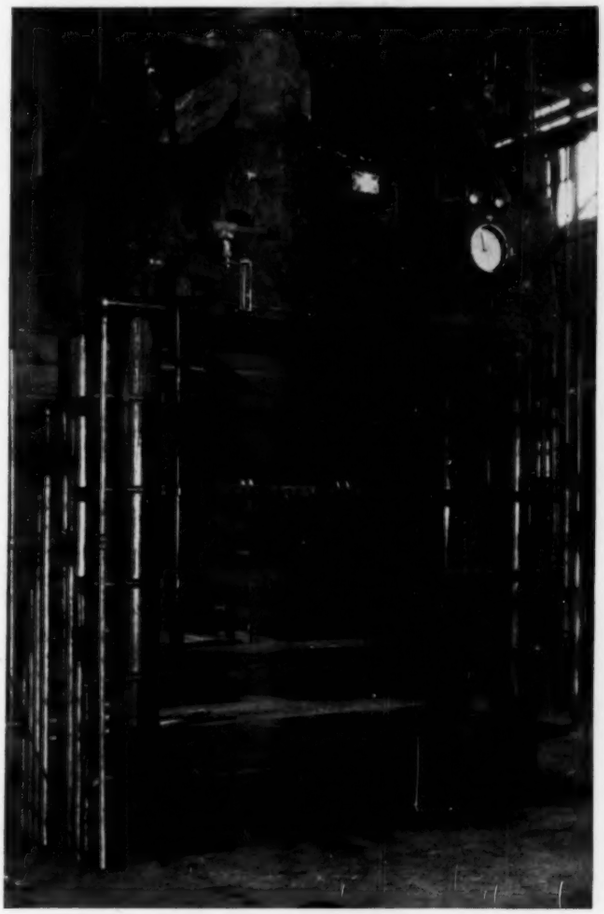
FOR USE in the laboratory, field and factory, the Chemical Publishing Company, of New York City, has brought out the Bennett Balance, a small scale weighing only 14 ounces, with a 2⅜ inch length. Said to be



accurate to about 1/100th gram, it has a capacity of 100 grams in all. The size of the scale permits it to be carried about in the pocket for ready use. It has a Bakelite base and weighing pan and is agate bearing. Made compactly, the Bennett Balance has no loose weights.

Largest Precision Press

EQUIPPED with two vertical sets of platens, each set arranged for separate operation, and each being closed by a battery of three rams, the largest precision press yet introduced to the rubber industry, for use in curing of automobile running boards, has recently been completed by the Adamson Machine Company, of Akron, Ohio. The hydraulic piping for the six rams on the press is so arranged as to be controlled by one operating valve. Uniform pressure is maintained on all molds regardless of difference in mold thickness or the number of molds inserted in either side of the press. Each platen is individually guided by means of bronze bushings operating on polished strain rods. The platen brackets holding these bushings are also utilized as supports for stainless steel piping. Slip joints are used throughout the steam system

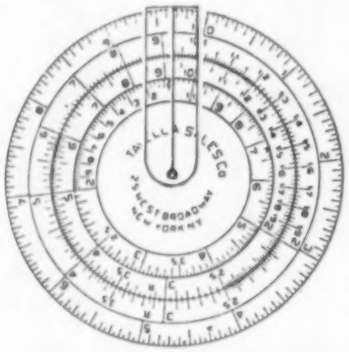


and individual steam traps are provided for each platen. To adapt the unit to special jobs specific features are incorporated in the press design. The illustration shows the half of the press above the operating floor. Overall height is 24 feet; weight is 80 tons.

Mascot Vest Pocket Slide Rule

MADE by an improved process of graduating black lines on white celluloid, the Mascot Vest Pocket Slide Rule has been introduced by the Tavella Sales Company, 25 West Broadway, New York City. Small in size, and light in weight, the rule is grease- and water-proof and can be cleaned by washing with soap and water. The scales are on a disc 2¾" in diameter, length of multiplication-division scale, 6.3" as against 5" on "A" scale of the

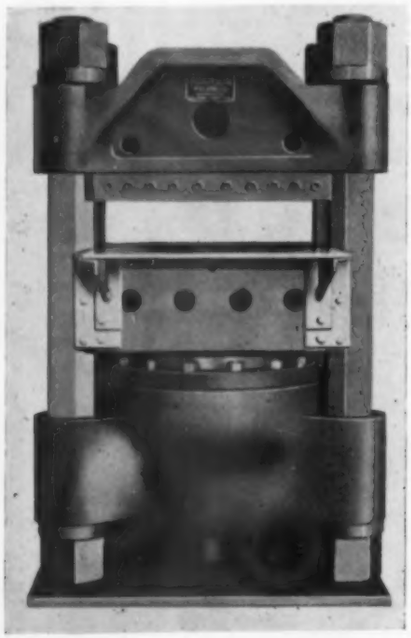
regular 10″ slide rule. Multiplication, division, square root and problems involving the use of logarithms and functions of angles are solved with this slide rule. The front side has four scales, including an inverted scale,



while the reverse side has sine and tangent scales and an A and D scale for finding squares and square roots. It lists at $1.00 with durable case and instructions.

Rubber Printing Plate Vulcanizer

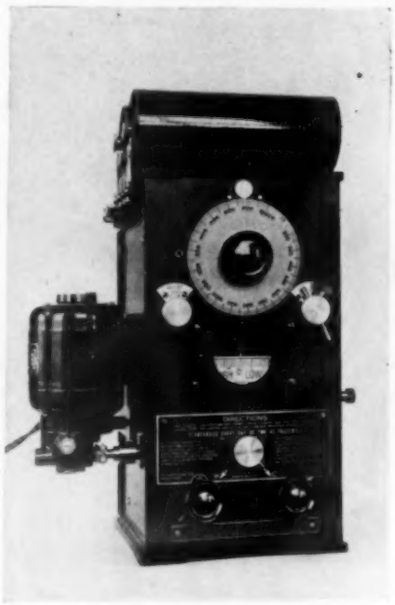
AFTER seven years of research the Adamson Machine Company, Akron, Ohio, has developed a press, equipped with a motor driven pump unit, for curing rubber printing plates. There are three size models available, i.e. 24″ x 38″, 24″ x 32″, and 18″ x 18″. Plates are cured on these presses without any make-ready necessary. They can be equipped with either a hand pump for developing hydraulic pressure or with an electrically-driven pump. Because it is essential that the temperature uniformity be within about 2°, the company discourages the use of electricity as a heating element, stating that steam is a better



medium to give the required uniformity especially in connection with the fine half-tone plates. The presses, however, may be furnished with electrically heated platens if desired. Model A-6460, illustrated, has a 5″ ram opening, weighs 7700 pounds without the pump unit, and is already in operation in factories throughout the country.

Foxboro Motor Drive Unit

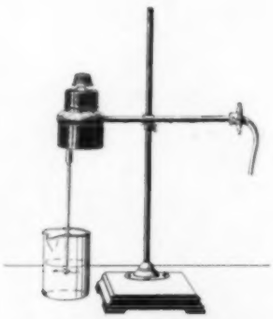
FOR installations where their Potentiometer Control Pyrometers are to be used singly, the Foxboro Company, Foxboro, Massachusetts, have developed an improved type of motor drive unit, called the "Type H."



This drive comprises a ball bearing enclosed motor, and a double worm and gear speed reducing system packed in lubricant. In addition to its availability for single-controller installation, the new drive is powerful enough to operate one additional controller, through a coupling between the controllers.

"Lab-Mix" Stirrer

EQUIPPED with a shaded pole type motor and a variable speed rheostat, a new laboratory stirrer has been introduced by the Chemical Publishing Company, of New York City. Termed the "Lab-Mix," this stirrer is intended



for use in emulsification dissolving, dispersing, extracting, and for rapid stirring operations. Built for operation on alternating current only, the stirrer will run 24 hours daily without damage, according to the manufacturer, who further claims that it produces no sparks and that vapors will not injure it. The "Lab-Mix" weighs 1 pound, 13 ounces, and fits any ordinary clamp holder.

REVIEW SHELF

• Monthly Review of New Books, Pamphlets, Company Catalogs, Service Bulletins, House Organs, etc., Pertinent to the Industry

ALCOA ALUMINUM AND ITS ALLOYS. Published by the Aluminum Company of America, Pittsburgh, Penna. 92 pp.

To meet the apparent growing demand for information concerning the properties of aluminum, the newest of structural materials, this book has been published by the Aluminum Company of America. It presents in concise form much of the fundamental information concerning the alloys produced by the company. The number of these alloys has grown to a surprising extent, no two of them possessing the same properties. Of particular interest to the rubber industry is a chapter devoted to "Casting Alloys." An interesting book to those concerned with structural metals, or for general information.

•

CHEMICALS BY GLYCO. Distributed by the Glyco Products Company, Inc. 949 Broadway, New York City. 32 pp.

Issued in revised form this catalog contains information and formulae relating to emulsions, abrasives, lacquers, synthetic resins and waxes, cutting and spraying oils, soluble oils, etc. In addition to such information the catalog also includes chemical tables showing the melting points of resins, waxes, etc., as well as tables relating to the pH ranges of common indicators.

•

PYRANOL CAPACITORS. Issued by the General Electric Company, Schenectady, New York. 26 pp.

"Because of low power-factor, a large percentage of industrial plants are actually buying much more current in their electrical systems than is required for the kilowatt-hours which their equipment uses" says the foreword to this booklet which then proceeds to indicate how the power-factor may be improved for profit by the use of Pyranol Capacitors produced by General Electric. The varied and diversified line produced is described and illustrated in this booklet which also includes prices and dimensions of the equipment.

•

THE CONTRIBUTION OF THE CHEMIST TO THE RUBBER INDUSTRY FOR THE ADVANCEMENT OF CIVILIZATION. (A Reprint.) By Harry L. Fisher. Issued by the U. S. Rubber Company, 1790 Broadway, New York City.

Seeking to draw a definite line between an ordinary experimenter and a chemist, Dr. Fisher, associated with the General Laboratories of U. S. Rubber, raises a pertinent question, i.e., Was Charles Goodyear a chemist? He suggests, in this readable article, that we include in the definition of a chemist "one who uses chemicals to such good advantage as to produce new and useful goods." The balance of this article is devoted to a brief review of the more important contributions of chemistry to the rubber industry within recent years including the discovery of accelerators of vulcanization and of antioxidants.

•

SCREW OR SPIRAL CONVEYOR MACHINERY. (Section 107 of General Catalog 100). Distributed by the Palmer-Bee Company, Detroit, Michigan. 64 pp.

The complete line of screw or spiral conveyor machinery for the elevating and conveying of industrial materials, manufactured by Palmer-Bee, is well described in this catalog, which includes such information as specification tables, capacity charts, installation suggestions, and the like. Illustrations of conveying machinery in operation are distributed through the book. Prices, too, are included.

•

ALEMITE HAND GUNS AND FITTINGS. Issued by the Alemite Division, Stewart-Warner Corporation, Chicago, Illinois. 54 pp.

Divided into four sections—Fittings, Hand Guns, Hose, and Adapters and Accessories—this revised catalog consists of a series of illustrations, each of which is accompanied by a brief description and the price. Detail drawings of various hand guns are included together with lists of repair parts. The catalog is notched for ready reference to the type of Alemite equipment or part wanted.

•

ALEMITE SERVICE EQUIPMENT. Issued by Alemite Division, Stewart-Warner Corporation, Chicago, Illinois. 25 pp.

Alemite service equipment, including powerguns, specialized lubrication equipment, and accessories, are reproduced in this revised catalog in their natural colors. Full details, specifications, and prices are quoted in every instance. It is interesting to note that Alemite equipment has been sold since 1917, with the latest developments since that date shown in this new catalog.

METALLIC SOAPS—THEIR USES AND PROPERTIES. Issued by the Metasap Chemical Company, Harrison, N. J. 40 pp.

Of special interest to research workers this booklet, said to be the first of its kind in the English language, was prepared by Francis J. Licata and the Technical Sales Department of Metasap. It contains an explanation of what metallic soaps are, methods of manufacture, chemical and physical properties, methods of analysis, and applications in various industries. In the rubber industry molds can be lubricated by dusting their surfaces with fine metallic soap powders. Containing several technical illustrations the booklet is an excellent treatise on the subject of metallic soaps, even containing a bibliography. Results of experiments conducted by the Metasap laboratories are also given in the booklet which merits reading by rubber technologists.

•

MANHATTAN RUBBER PRODUCTS FOR INDUSTRY. Issued by the Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J. 56 pp.

Designed to fit into the standard size filing cabinet, this is a condensed catalog of the mechanical rubber products manufactured by the rubber division of Raybestos-Manhattan, including belts, hose, packing, molded goods, friction material, rubber covering, and abrasive wheels. It is replete with illustrations, descriptions, performance charts and graphs, and tables depicting various sizes and prices. Suggestions as to the selection of the right types of conveyor belts are also contained in the catalog which is printed in several colors.

•

TAG INDUSTRIAL THERMOMETERS. (Catalog No. 1125). Distributed by the C. J. Tagliabue Manufacturing Company, Park and Nostrand Avenues, Brooklyn, N. Y. 24 pp.

This latest Tagliabue catalog, well-printed, is devoted to a discussion and description of the varied line of industrial thermometers featured by the company including miscellaneous metal and woodback thermometers, as well as hygrometers, U gages, mercurial vacuum gages, and mercurial barometers. Each model is illustrated, with accompanying descriptions and specifications. The complete line is conveniently arranged in group listings for quick reference.

•

MECCANICA DEL PNEUMATICO. A Reprint. By R. Ariano. Published by Direzione-Amministrazione, Via Petrella, 14, Milan, Italy. 30 pp.

Written in Italian this article reprinted from *L'Industria* fully covers the mechanics of pneumatic tires. It is illustrated with several technical charts and graphs, and contains many technical equations. A portion of the article is devoted to a discussion of fabric stresses in pneumatic tires, while mention is made of the importance of good roads on tire performance.

•

MONARCH SPECIALLY TOOLED SEMI-AUTOMATIC ENGINE LATHES. Issued by the Monarch Machine Tool Company, Sidney, Ohio.

Printed in two colors, this catalog is devoted to a description of the semi-automatic engine lathes manufactured by Monarch. Each model is well illustrated and includes a schematic diagram. Special features built into these machines are pictorially shown, and described.

Editorial Comment

Price War Avoided?

IN THESE columns last month we deplored the fact that a meeting of rubber manufacturers called to consider another tire price increase ended with the decision to permit dealers to offer special "discounts" to consumers over the July 4th Holiday, presumably to combat price cutting instituted by certain chain stores. We stated at the time that, if history repeats itself, the tire makers would find it difficult to curtail the special terms permitted their dealers, and that unless drastic action was taken we could see still another disastrous price war.

Fortunately, tire manufacturers are agreed that price wars are of advantage to nobody but the consumer. It has taken years of reduced profits attributable to price wars to make them realize so simple a formula, although some of them have yet to learn. Therefore, it was good news to learn that in mid-July the manufacturers convened at Akron, under the auspices of the Rubber Manufacturers Association, for the express purpose of halting the special discounts granted over the "fourth". That the tire makers recognize the difficulty of withdrawing special dealer terms was evidenced in a letter sent by Firestone to its dealers urging that each individual dealer take the lead in calling meetings of tire dealers in various localities with a view toward "keeping the peace."

However, the restoring of tranquility in the tire field is no easy matter. The manufacturers finally seem to be doing their part but dealers are reluctant to renounce their consumer bait. We note several tire stores in New York still giving free tubes away with the purchase of every tire. The same is true, we are told, of the Chicago market. It rests with the tire makers to enforce their agreed-upon stand. The methods they use to kill price-cutting tactics conducted by their dealers is far less important than the achievement of restoring those prices. The results obtained by the present cooperative agreement may do much toward avoiding the possibility of future price wars.

•

Favorable Statistics

GENERALLY, about this time of year, there is a lot of talk concerning a Fall pick-up. The first six months of 1935 showed up very well. Statistics, as dry as they usually are, are most favorable. Based on these statistics we see an excellent chance for a general revival of business this Fall.

The automobile industry has been recognized as a business barometer for many years, and justly so. From statistics recently made available by the Automobile Manufacturers Association some 5,065,000 persons are employed directly and indirectly this year in the automotive trades. This is 12% of all persons gainfully employed in the United States, or, in other words, one out of every five families in the country is dependent upon the industry.

To borrow a phrase from Ex-Governor Smith, let's look at the record. In 1934 automobile production in the United States and Canada amounted to 2,869,963 units. The output for the first six months of 1935 was approximately 30% higher than in the same 1934 period. An even greater increase was noted in July of this year over July of 1934. If this rate of increase continues, or even drops to some extent, it is certain that the annual figure for 1935 will exceed that of last year by almost a million units, or more. We consider these most favorable statistics.

Because the automobile industry is responsible for the well-being of so many smaller industries, we visualize a real business revival this fall. The first industry to benefit from increased activity in the automobile shops is our own. We could quote favorable rubber statistics at this point but will content ourselves with the above references to the automotive trade.

•

Watch Your Exports!

MANUFACTURERS exporting their rubber products to foreign countries should scan closely the news pages of this and other trade journals. There seems to be a concerted movement to construct abroad home-owned and controlled rubber factories the output of which naturally enters into immediate competition with imported goods. It is certain that the erection of each new factory abroad cuts down to some extent the annual export volume of American manufacturers, as well producers in other leading nations.

For instance, in this issue you will note mention of a new factory being built in Bombay, another in Spain, one in Uruguay and several in Russia. It is inevitable that these factories, once completed, cut into American rubber exports. It is natural that foreign countries urge and sponsor the construction of factories on home soil. As a rule the corporations in back of factories are given special concessions, such as lengthy monopolies, reduced tariffs on raw materials needed for production, increased tariffs on imported competitive products, and the like.

There is, of course, nothing that American rubber manufacturers can do about this situation. We suggest, however, that they watch their export trade closely and devote more attention to the cultivation of domestic sales.

CURRENT • NEWS
of the Rubber Industry

AUGUST, 1935

GOODRICH FINANCING IS FINALLY APPROVED

Company Secures Sufficient Votes to Embark on the Refinancing Program Outlined by Officials to Retire 6½% Mortgage Bonds in Proxy Battle

After a series of postponed and adjourned stockholders' meetings, and amid a barrage of various charges, the B. F. Goodrich Company, of Akron, finally secured the right to embark on its refinancing program, the main feature of which is the plan to issue $28,000,000 first mortgage 4½% bonds, the proceeds of which will be used to retire outstanding Goodrich 6½% mortgage bonds, and 5½ and 7% notes of the Hood Rubber Company, a subsidiary. The complete refinancing plan calls for the creation of a new $45,000,000 first mortgage on the Goodrich property, under which the 4½% bonds, of 25 year length, will be issued. According to estimates it will require $18,000,000 to retire the present 6½% bonds.

Prior to the meeting on July 30, when approval of the plan was won by Goodrich by a 76.1% vote of all outstanding preferred stock, and 75.3% of common stock (75% approval of both common and preferred stockholders was necessary for approval), a series of charges and countercharges were indulged in by proponents and opponents to the refinancing program.

The first strenuous objector to the plan was the banking house of Otis & Company, which reverted to court procedure and on July 10 was granted the right to examine the books of Goodrich prior to the scheduled meeting of stockholders. After a brief examination of the books Otis charged that 9 of the 17 Goodrich directors and 3 of the executive committee did not own any stock. Otis also alleged that under the proposed new funded debt set-up, Goodrich debt would be approximately 67% of total capitalization, as compared with 35% for Goodyear and 19% for Firestone. Many of these charges were contained in a letter sent by Otis to all Goodrich stockholders.

Following the announcement of these charges President Tew, of Goodrich, sent an explanatory leaflet to company stockholders charging that refusal of Goodrich directors to deal with Otis on the proposed bond issue preceded the Otis attack on the refinancing program. He also stated that Otis officials had previously approached Goodrich and recommended the adoption of a refinancing plan.

The special meeting held in New York City, on July 16 was postponed to July 18, the postponement being made to permit the counting and checking of proxies. The July 18 meeting was then postponed to July 25 since an insufficient number of favorable proxies were on hand, according to report. The July 25 meeting was later postponed to July 30 in order to again permit the counting and checking of proxies. It was at this last meeting that favorable approval was finally announced.

Rubber Sales Plan

The Association of Stockholders in Rubber Corporations, of London, England, has advanced a plan to bring about higher prices by means of a sales pool. The plan provides for all producing companies to turn over 10% of their output to a sales organization which would work in cooperation with the Rubber Regulation Committee, this rubber to be withdrawn from the market with a bank acting as trustee, and to be disposed of only when the price was sufficiently high. The sales organization suggested would consist of seven representatives of the principal rubber producers, and six representatives of the stockholders' association, which is not associated with the restriction scheme in any manner.

Between postponed meetings two Goodrich stockholders joined in the attack against adoption of the refinancing scheme, these being W. H. Hunt, of Cleveland, and John R. Weed, of Beverly Hills, Calif. Weed claimed on July 18 that Goodrich's registration statement to the Securities and Exchange Commission revealed that its officers and directors own only 1.1% of preferred shares, and only one-half of 1% of common stock. A few days later, however, Mr. Weed, who was reputed to hold 2400 preferred shares, sold his stock to an outside party, and his objections were automatically removed.

In another letter sent to all Goodrich stockholders, W. H. Hunt charged that the refinancing scheme if carried out would endanger the investment of every stockholder. He called attention to Goodrich's operating losses in the last five years during which common stockholders received no dividends and preferred stockholders have seen unpaid dividends rise to $28.00 per share. He also asked the Securities and Exchange Commission to postpone the scheduled meeting until such time as stockholders had a chance to study the plan and vote "intelligently," but was advised that the Commission had no jurisdiction in the matter.

Stockholder Continues Fight

Despite all opposition, however, Goodrich stockholders finally approved the plan on July 30. Mr. Hunt, nevertheless, sent another request on August 1 to the Securities and Exchange Commission asking it again to intervene. He charged "high pressure" methods were used by Goodrich to win final approval, and stated that he was not content with the statement that the Commission had no jurisdiction in the matter. Goodrich officials, however, are already preparing plans to float the approved $28,000,000 4½% mortgage bonds in the $45,000,000 refinancing program.

LABOR SITUATION IS GRADUALLY EASING UP

Akron Rubber Executives Expect No Further Major Difficulties with Workers This Year—Labor Forming an International Union of Workers

Although rubber manufacturers in and around Akron are prepared for an expected series of minor disturbances sometime early this Fall they doubt whether any of these disturbances will be serious enough to warrant the causing of any strikes. Although the rubber-worker's union is expected to become part of an international union now being organized by the American Federation of Labor, Akron executives doubt whether this union will induce the return of thousands of workers who have been steadily dropping from union ranks because of dissatisfaction with results.

Another factor tending to make a rubber strike during the last half of the year improbable is the fact that manufacturing operations normally decline during this period. In addition, manufacturers are equipped with fairly ample inventories, especially the tire makers, which would better enable them to stand a strike. Union strategists recognize these vital factors and are expected to act accordingly. Still another angle, pointed out by rubber officials, is that the chief issue in any industrial dispute of major proportions that may arise would be that of union recognition, and a strike called for that purpose alone is not likely to receive the sympathy or support of workers as would one designed to obtain a more tangible economic benefit.

In all probability the chief irritant in industrial rubber relations this Fall will center about the new Wagner Act. Union officials are still smarting over the defeat handed to them when the dropping of all NRA codes caused their suit to force elections to select representatives for collective bargaining in rubber factories to be dropped. Therefore, it is believed that these officials will attempt to utilize the terms of the Wagner Act to again enforce their demands for such elections.

On the other hand many rubber executives feel certain that the unions, especially any newly-created international union, will not attempt to make use of the Wagner Act since it is certain that any such attempt would be fervently resisted by the rubber manufacturers and would eventually lead to the courts for final decision. These executives state that they believe the American Federation of Labor is in no hurry to test the strength of the law in the courts.

Plans for the international union call for a convention to be held in Akron in September to approve of details. Once formed the present United Rubber Workers' Council will cease to exist.

PROCESSING DECISION IS AID TO RUBBER INDUSTRY

The decision of the Massachusetts Circuit Court of Appeals, rendered on July 16, nullifying the Agricultural Adjustment Administration's processing tax, will prove of aid to the rubber industry, particularly to tire manufacturers who naturally use a great deal of cotton in their manufacturing operations.

According to an estimate by the Automobile Manufacturers Asociation, the motor industry in 1933 used 431,468 bales of cotton for all purposes, including tires, which amounted to 6.9% of the total domestic cotton consumption for the year.

In the rubber industry, the United States Rubber Company, as an example, consumes approximately 120,000 bales of cotton a year. Through the curtailment of cotton growing and the imposition of the processing tax to pay for cotton that was not raised, U. S. Rubber had its 1934 earnings penalized approximately $5,000,000, according to report.

The Massachusetts court, in its ruling, found that Congress had no authority to control or regulate production of agricultural products by taxing them before they enter into interstate commerce. Since it deemed the Act unconstitutional the Court did not rule on the point whether the processing tax was a direct or excise tax, an important point in the original suit.

Out in Akron it is understood that several of the larger rubber manufacturers are preparing legal suits to seek to recover some of the millions of dollars paid to the government in process taxes on cotton.

Goodyear, Goodrich and Firestone produce their own cotton fabric in subsidiary mills located in the South and New England, Firestone recently having expanded its cotton fabric production by the purchase of a large mill at Gastonia, North Carolina. In addition, these three manufacturers also purchase additional supplies from independently operated mills. Small rubber manufacturers purchase all of their fabric material from these independent mills.

The AAA tax was 4.2 cents per pound, but the amount paid to the government as taxes by the mill subsidiaries of the rubber manufacturers is a guarded secret at Washington, where officials are forbidden by law to reveal the tax amounts paid by separate mills.

It is not known whether the Akron rubber manufacturers will file a series of individual suits against the government seeking recovery of the processing tax payments, or whether one test case will be instituted, the final disposition of which will affect the balance of the manufacturers involved.

McCLAREN RUBBER MERGED WITH DAYTON RUBBER CO.

The McClaren Rubber Company, Charlotte, North Carolina, has been merged with the Dayton Rubber Manufacturing Company, of Dayton, Ohio, according to an announcement by I. Eisbrouch, McClaren president. The merger becomes effective on August 15.

Whether or not the Charlotte factory, which has been in operation since 1919, and which normally employs about 350 workers at an annual payroll of approximately $300,000, will be continued is said to depend upon the future trend of business. It will be continued at least until the merger deals are completed.

Rubber Employment

According to a report by the National Industrial Conference Board, eighteen new industries which did not exist in 1879 absorbed almost one-seventh of all labor employed in manufacturing activity in 1929. In that year the automobile industry occupied first place among the eighteen new industries giving employment to approximately 450,000 workers. The manufacture of tires and tubes occupied third place among these industries, with a total of 83,263 workers, according to the report.

35th Firestone Anniversary

The 35th anniversary of the founding of the Firestone Tire & Rubber Company was observed in Akron on August 3. The company has grown from one employing 11 persons to one employing some 20,000 in all of its diversified departments. A basket of 35 roses was presented to Harvey S. Firestone, Sr., founder of the company, by a committee representing the 400 members of the recently-organized Twenty-Year Service Club at Firestone. Mr. Firestone recalled some of the early problems of the rubber industry, and contrasted the type of equipment used in the 1900's with that currently in use.

Exhibit at Houseware Show

Several rubber manufacturers exhibited their houseware lines at the New York Housefurnishing Show held at the Hotel Pennsylvania, in New York City, from July 10 to 19, inclusive. U. S. Rubber Products, Inc., displayed its Chipless line of latex coated kitchen accessories, a full description of which will be found elsewhere in this issue. The I. B. Kleinert Rubber Company showed its Country Club line of reversible rubberized shower curtains in two-tone effects, among other styles. Savafal hand and foot grips for use on and in the bath, products of Rudolph, Healey & Scudder, Inc., were also on exhibit at the show.

Protest Reorganization Plan

Three appeals from Judge Chestnut's confirmation last month of the reorganization plan of the Kelly-Springfield Tire Company were filed in the United States District Court, at Baltimore, on August 2. The three appellants, all of whom were stockholders in a company consolidated with Kelly-Springfield two years ago, stated that they did not consent to the consolidation, and also objected to the confirmed reorganization plan under which Goodyear is to take over control of the Cumberland factory.

Open Detroit Sales Office

The Hydraulic Press Manufacturing Company, Mount Gilead, Ohio, has opened a sales office in Detroit in the Curtis Building, 2842 West Grand Boulevard. It will operate as a direct factory branch in charge of Reider Thoreson who has been with the company for the past ten years. The entire state of Michigan, together with Northwestern Ohio and Northeastern Indiana will be served from the new Detroit office. District sales offices are also operated in New York and Chicago.

ORGANIZE TIRE COMPANY TO PRODUCE IN SPAIN

According to a report from American Assistant Trade Commissioner Miles Hammond, at Madrid, a new enterprise, the S. A. Continental, has been organized for the purpose of manufacturing tires and tubes in Spain. Authorized capital of the new company is reported to be 2,750,000 pesetas. (Current value of the peseta is approximately 14 cents).

The factory to be erected by S. A. Continental will be located at Torrelavega, near Santander. It has been announced that patents developed by the German Continental Company will be used in the manufacture of both tires and tubes.

Spanish capital is said to be well represented in the new manufacturing enterprise, with the Banco Central reported to have an important investment. German capital, too, is believed to be participating.

At present there are three tire and tube factories operating in Spain, the combined production of which is more than sufficient to supply the entire demands of the Spanish domestic market. It is likely that S. A. Continental will produce additional rubber products, as well as the tires and tubes announced.

U. S. TRADE COMMISSION RESTRAINS RELIABLE CO.

The Reliable Tire Company, of Chicago, well-known tire mail order house trading under the names of the York Tire & Rubber Company and the Globe Tire & Rubber Company, has entered into a stipulation with the Federal Trade Commission to cease all unfair advertising practices.

The company engages in the purchase, repair and resale of used automobile tires, and in its advertising to consumers under the heading of "new low price tires" offered a guarantee of 12 months of service, allegedly offering for sale new, well-known tires of standard brands. The stipulation points out that these tires were not new, nor were they retreaded or "reconstructed," but that reconditioning was limited to the repair of worn or damaged portions of tires, and to vulcanizing and painting so that the tires presented a new appearance.

Such words as "reconstructed" and others of similar import, will be discontinued by Reliable, and its subsidiaries, so that purchasers will not be deceived into believing they are buying "reconditioned" or "rebuilt" tires when such tires are merely vulcanized or painted.

INCREASE EXPORTS ON SCRAP AND RECLAIMS

Exports of scrap and reclaimed rubber in the first five months of 1935 from the United States amounted to 27,218,825 pounds, valued at $642,691, an increase of 24% in quantity and 18% in value over exports for the same period of 1934.

Reclaimed rubber, for use in the rubber manufacturing industries of Canada, United Kingdom, Australia, Argentina, Cuba, and Mexico, amounted to 5,008,102 pounds valued at $242,964. Scrap rubber was destined for two general uses abroad—as reclaimed rubber after being subjected to reclaiming processes in the rubber manufacturing industries of Canada, Argentina, France, Germany, and the United Kingdom; and as the product from which a rough and low-priced rubber footwear is made in Spain, China, and Hong Kong.

HOSE MAKERS TO CEASE PRICE-FIXING TACTICS

Thirteen individuals and eighteen rubber companies, all associated with the Rubber Manufacturers Association, have entered into a stipulation with the Federal Trade Commission to cease all price-fixing efforts. The stipulation is the result of a complaint brought against the respondents by the Commission on April 5 charging that the rubber companies involved had conspired to fix prices on rubber hose and were using the NRA code to create a monopoly. The RMA acted for the industry as the code authority.

As a result of the charges, the individuals and companies named in the action filed answers and gave evidence of fighting the Commission's attempt to induce them to defer from price-fixing. Announcement of the stipulation revealed that these original answers had been withdrawn and new answers filed consenting to the cease-and-desist order, but asserting that their previous practices were warranted by the NRA code covering the manufacture and sale of rubber fire hose.

The order agreed to by the rubber companies includes the following prohibitions: combining to fix wholesale and retail prices for hose and other mechanical rubber goods; communicating proposed prices among each other for the purpose of preventing competition; fixing uniform terms and conditions of sale; seeking to influence competitors with regard to prices; refusing to sell dealers who do not quote the fixed retail prices: and, finally, classifying buyers for the purpose of suppressing competition among members of the Rubber Manufacturers Association.

The origin of the Federal Trade Commission's complaint charging monopolistic tendencies on the part of the hose manufacturers, was due to complaints made to both the Commission and the Senate Finance Committee by several municipal consumers of large quantities of hose, including one by Mayor LaGuardia of New York City.

An investigation conducted by the Trade Commission is said to have revealed the fact that on July 14, 1933, when closed bids on fire hose requirements for New York City submitted by eight rubber companies, were opened, seven of them quoted 71 cents a foot, with the eighth concern bidding 75 cents per foot. These bids were all rejected, but subsequent bids opened on September 1, 1933 revealed that all eight concerns had bid 80 cents per foot for hose that in the previous year had been purchased for 34 cents per foot. Again, on February 11, 1935, additional bids were opened and it was found that thirteen concerns had all submitted bids of 82 cents per foot. This chain of events so enraged the New York Mayor that he asked the State Legislature to authorize the city to make its own hose, with the members ridiculing the bill and finally killing it, whereupon the Mayor took his complaint to Washington.

Individuals named in the Federal Trade Commission's restraining order include A. L. Viles, O. C. Pahline, F. D. Hendrickson, R. E. Drake, Wm. Lichtenstein, B. Felix, F. Thatcher Lane, W. L. Finger, J. H. Conners, H. N. Young, C. D. Garretson, A. D. Kunze, and Hamilton Abert.

Corporate members of the Rubber Manufacturers Association named in the order are: Acme Rubber, American Rubber Manufacturing, Boston Woven Hose & Rubber, Cincinnati Rubber Manufacturing, Continental Rubber, Goodrich, Goodyear, Hamilton Rubber, Hewitt Rubber, Home Rubber, Raybestos-Manhattan, Mercer Rubber, Pioneer Rubber, Quaker City, Republic Rubber, Thermoid Rubber, U. S. Rubber, and Whitehead Brothers Rubber companies.

Boston Office for Schulman

A. Schulman, Inc., of Akron, dealers in scrap rubber, crude rubber and hard rubber dust, have opened a branch office at Boston in the Boston Consolidated Gas Building, 250 Stuart Street. The new office is in charge of Dave Lundquist, formerly manager of the St. Louis office and warehouse. In announcing the opening of the Boston office, Alex Schulman, president, stated that it was due to increased business activity plus a desire to provide better service for New England rubber factories. The Boston branch will carry a complete stock of all types of rubber scrap and hard rubber dust to serve both the foreign and domestic trade.

Industrial Builds New Plant

Industrial Rubber Goods Company, St. Joseph, Michigan, manufacturer of automobile supplies and mechanical rubber goods, is building a new brick and steel structure which will house a machine shop in addition to being used for warehouse purposes. The building will be 50 x 225 feet in size, and is expected to be ready for occupancy in the near future.

STATISTICS INDICATE RUBBER TRADE SAFETY

Statistics compiled by the National Safety Council indicate that in the year of 1934 the rubber industry became the safest large industry in the United States, although several smaller industries—tobacco, laundry, printing and publishing, and cement—outranked it in frequency.

In the severity rate (the Council rates safety from the standpoint of frequency and severity) tobacco, textiles and refrigeration, led the rubber industry. However, rubber, with a ranking of fifth in frequency and fourth in severity, easily takes the lead in the group of large industries.

The high ranking of the rubber industry is a tribute to the intensive campaign on safety which has been conducted in the industry for more than a decade. It is probable that no other industry as a whole gives more attention to safety work than does rubber, and the cumulative efforts of the long campaign which has been conducted are now making themselves apparent in national statistics.

Practically all of the rubber companies of the country are actively connected with the rubber section of the National Safety Council, which has made an exhaustive study of the hazards of the industry. As a consequence, every factory is kept fully informed as to the best methods of dealing with hazardous operations and situations.

RUBBER INDUSTRY'S SWORDFISH CLUB MAKES GOOD

A struggling swordfish, the gallant fishermen, and the two captured prizes (one suspended, the other lying on the deck), tell an eloquent fishing tale.

After four years of futile fishing, the Swordfish Club, consisting of rubber men located on the Eastern coast, at last succeeded in landing two swordfish on their fifth expedition which took place on July 20 and 21, twenty-five miles S. E. of Block Island, off the coast of Rhode Island. In former years swordfish had been sighted but it was not until the eagle eyes of the club members, sharpened by four years of trying, picked out two specimens, both of which were caught. (Editor's Note: Local boys make good). The two fish weighed 200 and 275 pounds respectively (weights are not guaranteed by this correspondent), and were landed in record time. The larger fish was harpooned through the spine, while the smaller one lost about 6 inches of the tip of its sword as a result of the battle. The group in the party consisted of Bob Casey, Jack Coe, Lem Foutz, Bill Higgins, Bill Cisney, Jack Roberts, John Herron, Bruce Silver, Dave Scott, Gib Madge, Stan Krall, Frank Ward, Cabby Bartle, Ernie Bridgwater and Butch Hamister. The chartered boat was the 51-foot cabin cruiser *Let's Go*—a seaworthy craft manned by a crew of three, and populated by the above bevy of busy fishermen. After the catch the two swords were raffled off, with the larger one going to Bill Higgins, and the other to Jack Roberts. With this distinctive achievement to its credit, the club, which originated a few years back when Dave Scott shanghied the "members" as week-end guests on the "Scottie", looks forward to next year's trip with the expectation of doubling this year's catch.

Financial News

U. S. HAS NET PROFIT FOR FIRST SIX MONTHS

Advance reports of the semi-annual statement expected to be made public in the near future by the United States Rubber Company indicates a net profit of approximately $650,000 for the six months ended June 30, 1935, after deducting all charges, which compares with a net of $26,588 in the same period of 1934. It represents the best first-half performance in any year since 1927.

U. S. Rubber has reported substantial losses during the first six months of every year from 1930 to 1933 inclusive. In the first half of 1929 reported net profit amounted to $568,641. In the year preceding the first-half report showed a large loss after inventory write-downs. In 1927 the first-half profit was $3,231,604.

The 1935 semi-annual report is expected to show that volume of business was increased only moderately over 1934. The unfavorable effect of the unsettled tire price situation which existed during the period reported is believed to have been offset by the wide diversification of manufacturing and selling activities. Illustrative of this is the mechanical rubber goods division, which formerly incurred heavy losses, and which has been transformed into one of the most satisfactory U. S. Rubber units.

During the first six months of 1935 U. S. Rubber's plantations subsidiary again operated on a profitable basis, although higher costs were enforced by the curtailed operations necessary under the restriction scheme with the result that profits are less than reported in the previous period.

GOODYEAR REGISTERS $53,749,500 BOND ISSUE

Goodyear Tire & Rubber Company, Akron, registered $53,749,500 first mortgage and collateral trust 5% bonds (maturity date May 1, 1957) with the New York Stock Exchange on July 26, as well as 780,418 shares of $7 no par cumulative, first preferred stock, issued, 1,542,499 shares of no par common stock, issued, and 74,478 shares of no par common stock, unissued. The stock was also registered on the Cleveland and Los Angeles stock exchanges. The statement applying for registration of this large issue was filed with the Securities and Exchange Commission, at Washington.

MONSANTO INCREASES QUARTERLY PROFITS

Net earnings of the Monsanto Chemical Company, St. Louis, Missouri, for the second quarter of 1935, including the earnings of the Swann Corporation which was acquired during the period, amounted to $923,125, equal to 94 cents a share on the 974,133 shares outstanding on June 30. Net earnings for the same quarter of 1934 were $704,918, or 81 cents a share on 864,000 shares then outstanding.

For the six months period ending June 30, profits, including Swann earnings, were $1,848,449, or $1.90 per share, compared with $1,397,035, or $1.59 a share in the same period of the preceding year.

The June 30 Monsanto balance sheet shows that all outstanding preferred stock of the Swann Corporation subsidiaries, totaling $703,600, was retired during the second quarter, as well as all outstanding Monsanto 5½% mortgage bonds, amounting to $877,500. Current assets are shown as $12,432,934 against current liabilities of $2,437,843.

Monsanto directors declared an extra dividend on July 25 of 25 cents a share in addition to the usual 25 cent dividend a share, both dividends to be paid September 14 to stockholders of record as of August 24, 1935.

FRENCH MICHELIN CO. SHOWS PROFIT FOR 1934

Approval of the balance sheet of the Michelin Company for the year of 1934, at a general meeting of directors recently, shows the company earned 6,031,000 francs. This profit compares with Frs. 33,354,000 reported in 1933.

According to American Assistant Trade Commissioner Lestrade Brown, stationed in Paris, the drop in profits may be accounted for by the amortization of the balance of the Societe Citroen credit, the whole amount of this amortization being 24 millions (francs) the company having been reimbursed 50 millions (francs) on this credit.

Michelin maintained its dividend at Frs. 35 net on founders' shares. The shares which brought in Frs. 22 net interest per capital share entirely paid in on June 1, and Frs. 16.50 on capital shares three-quarters paid in, also brought in interest in September at the same time that the bonds received payments of Frs. 42.24.

The balance sheet shows a decrease in available assets (Frs. 384,597,000 compared to Frs. 438,019,000 in 1933) which is counterbalanced by a decrease in liabilities to Frs. 57,146,000 as compared with 114,133,000 reported in the preceding year.

Suspend 3 Rubber Stocks

The stocks of the Mohawk Rubber Company, Aetna Rubber Company, and the Akron Rubber Reclaiming Company, were ruled off the Cleveland Stock Exchange on July 15 for failure to file for registration with the Securities and Exchange Commission. Under the new securities act all corporations wishing to list securities on any exchange must register with the Securities and Exchange Commission for approval, and open their books to the Commission from time to time giving detailed accounts of activities of directors in stocks or companies in which they are interested. Of the three rubber companies, Aetna is located in Ashtabula, Ohio, the other two being Akron concerns.

Profit for English Goodyear

The Goodyear Tyre & Rubber Company, of England, reports a total profit of £169,837 for 1934, as compared with a £176,345 profit reported in the previous year. The total profit includes provision for depreciation and income tax, but does not include interest and discount expenses on the debenture stock. The net profit was shown at £143,908 which compares with the 1933 net profit of £109,912. The £800,000 capital of English Goodyear is practically all held by the controlling company, Goodyear Tire & Rubber Company, of Akron.

FISK SIX MONTH PROFIT DROPS SHARPLY FROM 1934

Net profit reported by the Fisk Rubber Corporation, Chicopee Falls, Massachusetts, and subsidiaries, for the six months ended on June 30, 1935, amounted to $5,514, after provisions for Federal taxes and other charges, which is equal to 15 cents a share on 36,579 shares of 6% preferred stock. This net compares with one of $372,768, equal, after preferred dividends, to 57 cents a share on 447,356, $1.00 par common shares in the same period of 1934.

For the quarter ended on June 30, the company reports a net loss of $37,231, based on quarterly reports, contrasted with a net profit of $42,745, or $1.17 a preferred share, in the previous quarter, and $252,481, or 43 cents a common share, in the second quarter of 1934.

Gross sales, less returns and allowances, for the six months period reported on, amounted to $5,489,305, which compares with gross sales of $5,032,919 in the first half of the preceding year.

O'Sullivan Has 1934 Profit

O'Sullivan Rubber Company, Inc., of Winchester, Virginia, reports a net income of $26,977 for the year of 1934. Gross sales for the year were shown at $1,422,099.

Publish Pamphlet by Hauser

The summarized reports of Dr. Ernst A. Hauser, chief chemist of the Semperit Austro-American Rubber Works, of Vienna, on his 1934-1935 trip through the United States, Japan, China, Malaya and Ceylon, are to be published in pamphlet form in the near future by the *Gummi-Und Asbestzeitung*, the rubber trade journal of Austria, published in Vienna. The pamphlet will be titled: "My World Trip—1934/5." It is to be published in English, French and German, and will sell for $1.00 per copy. English copies of the pamphlet summarizing Dr. Hauser's trip will be available at the quoted price from THE RUBBER AGE as soon as they are published.

Superflex Sued for $50,000

A suit seeking $50,000 has been filed in the Common Pleas Court of Lisbon, Ohio, against the Superflex Tire Corporation, of East Palestine (Ohio) by R. F. Taggart. The suit asks the appointment of a receiver, marshalling of liens, and foreclosure of real estate properties. Fourteen causes of action are listed in the petition, many being for notes alleged to be unpaid.

Lee Tire Sales Increase

Sales for the eight months ended June 30, 1935, increased 11% over the corresponding period of 1934, according to A. A. Garthwaite, vice-president of the Lee Tire & Rubber Corporation, Conshohocken, Pennsylvania. Lee is now operating on a 5-day week basis, as compared with the 4-day week basis in operation during the month of June. A large part of Lee's tire distribution is secured through oil company outlets.

RESTRICTION

Connecticut rubber manufacturers will play a prominent part in the state Tercentenary Industrial Exposition, scheduled at the State Armory, Hartford, October 2 to 12. Carlton H. Gilbert, executive of United States Rubber Products, Inc., Naugatuck, has been designated group chairman for the rubber industry's participation in the exhibit.

Jenkins Bros., Bridgeport, mechanical rubber goods, jar rings and other rubber items, has sent out to its trade an elaborate historical map showing the localities of Tercentenary interest. Charles R. Yardley, sales manager, invited customers and members of their organizations to visit the Jenkins plant on their way through Connecticut, saying that "we will keep open house for you."

Frederick G. Hughes, vice-president of the New Departure Mfg. Company, Bristol, Conn., has been elected a director of the Acme Wire Company, New Haven, to fill a vacancy caused by the death of Alexander Harper, Bristol industrialist who long held an interest in the Acme company.

E. I. duPont de Nemours & Company, Inc., Wilmington, Del., will stage the largest industrial display ever made at the Eastern States Exposition, Springfield, Mass., during the third week in September. The DuPont exhibit, titled "The March of Chemistry", will be located in the Industrial Arts Building and will occupy a space 356 feet long. Twenty-one DuPont manufacturing divisions will show their products and indicate the processes by which they are produced.

A. J. Donahue, president of the A. J. Donahue Corp., Milford, Conn., garter manufacturers, has announced appointment of William West as vice-president of the company and general manager of the Donahue plant in Milford, Conn. Mr. West will also continue his former duties as manager of the plant in St. Hyacinthe, Quebec.

Mr. West is treasurer of the Canadian company. Before joining the Donahue organization, he was for a number of years connected with Warner Bros. Company, Bridgeport corset manufacturers. In his new position, he plans to spend one week of each month in Quebec and the rest of the time in Milford.

Plants of United States Rubber Products, Inc., Naugatuck, Conn., reopened July 15 after a shutdown of two weeks for inventory and repairs. A few departments worked during part of the shutdown period.

The U. S. Army quartermaster's depot at Boston recently announced award of contracts for 333,000 pairs of rubber footwear, amounting to approximately $1,000,000, for use by the Civilian Conservation Corps. Contract awards included the following: Tyer Rubber Company, Andover, Mass.; 12,250 pairs of various types at $1.91 to $3.08 per pair; Phillips Baker Rubber Company, Providence, R. I., 24,527 pairs of various types at $1.93¼ to $2.82; U. S. Rubber Products, Inc., Naugatuck, Conn., 186,159 pairs of various types at $1.94 to $3.19; Goodyear Rubber Company, Middletown, Conn., 18,100 pairs of various types, $1.92½ to $3.10½.

RUBBER SAFETY SECTION COMPLETES 1935 PROGRAM

Featuring a diversified schedule, the program for the sectional meeting of the Rubber Safety Section of the National Safety Council, Inc., to be held in Louisville, Kentucky, during the week of October 14 to 18, at the 24th Annual Safety Congress, has been completed. A. M. Dietz, of the Pennsylvania Rubber Company, Jeannette, Pennsylvania, is vice-chairman in charge of program activities.

The Rubber Section will hold sessions on Tuesday and Wednesday, October 15 and 16. On Tuesday morning the sessions will be opened by General Chairman H. A. Walker (Goodyear) who will give a resume of rubber section activities during the year. He will be followed by E. W. Beck, of U. S. Rubber Products, Inc., who will talk on "Fifteen Years of Safety in the Rubber Industry."

Following discussion of Mr. Beck's paper there will be a session devoted to "Round Table Topics" which will feature a number of short talks of a "round table" nature by leading safety supervisors of rubber factories. At a luncheon following the "round table" presentation of National Safety Council Trophies will be made.

The first speaker at the Wednesday morning, October 16, session will be T. E. Pittenger, factory manager, Firestone Tire & Rubber Company, on the subject: "Making Safety an Integral Part of Plant Operation." Reports of committees and sub-committees will then be made. After the reports have been approved C. S. Ching, U. S. Rubber Products Co., Inc., will speak on "Government Regulation and Its Relation to Safety." Following a discussion of this paper election of officers for the 1936 term will take place. An informal get-together luncheon will also be held on Wednesday.

TRENTON NEWS

Forty branch managers and other representatives of the Thermoid Rubber Company, Trenton, gathered at the Stacy-Trent Hotel, on July 12 and 13 to attend the annual convention. Talks were given by Frederick Schluter, president; George Fabel, of Charlotte, N. C., and Charles A. Crane, of Chicago. Following the second day meeting the Thermoid Company, Woven Steel Hose & Rubber Company, and the Thermoid Textile Company entertained employes and their families at an outing at Flemington, N. J. About 3,000 persons were in attendance.

Robert Lindley, 63 years old, of 1827 Brunswick Avenue, Trenton, chief electrician for the Hamilton Rubber Mfg. Company, for 22 years, died July 17 after an illness of three months. He was a member of Trenton Forest, Tall Cedars of Lebanon. He is survived by his wife, four daughters, and three sons. Interment was in Ewing Church Cemetery, Trenton.

Mr. and Mrs. Horace B. Tobin, of Trenton, have sailed for a Mediterranean cruise. Mr. Tobin is president of the Woven Steel Hose & Rubber Company, Trenton.

Alligator Rubber Products Company, 110 Lillie Street, Newark, has purchased a one-story plant, 50 by 200 feet, on Ridgewood Avenue and a plot of ground adjoining the factory to be used for manufacturing purposes.

RESTRICTION

As expected, the raising of the export duty by the Dutch Government resulted in a substantial decrease in native exports during June, whereas May showed an increase. Total exports from the Netherlands East Indies during May amounted to 36,872 tons, as compared with 26,546 tons in the preceding month, an increase of more than 10,000 tons. Provisional figures for June put the exports of plantation rubber from Java and Madura at 5,799 tons, from the outer provinces at 9,378 tons, and native exports from the outer provinces at 14,536 tons, for a complete total of some 29,000 tons.

Control of Dutch native rubber planters is still the biggest problem of the restriction scheme. It is apparent that the restricting of special areas will not suffice. Two plans now under consideration call for the purchase and eventual destruction of native rubber with the object of preventing stock accumulation which serves as a basis for speculation, or the purchasing outright of native plantations. Both schemes have many objectors and it is doubtful whether either will be given any serious consideration by the government.

For the first half of 1935 native excess over exports set by the International Rubber Regulation Committee from the Netherlands East Indies amounts to 24,522 tons, while estate exports are 11,340 tons below the quota, making for a total Dutch excess of 13,182 at the end of June.

To date the basic quota of 40,000 tons granted to Siam by the International Rubber Regulation Committee for the 1935-1938 period is still subject to acceptance of other signatory countries, as pointed out in the July 15 Rubber News Letter issued by the Bureau of Foreign and Domestic Commerce. The 40,000 ton quota, which has already been approved by the Siamese Legislature, was to have gone into effect on July 1. There appears no likelihood, at this time, of a meeting of the Regulation Committee in the near future, so the Siamese quota will have to remain "subject to acceptance" for some time to come.

A review of the regulation scheme was given by J. G. Hay, chairman of the Lambak Company, at a recent annual meeting held in London. To quote Mr. Hay: "The rubber regulation scheme is going through a phase which is quite common to similar schemes in the early stages of their history, and as long as that phase lasts it brings disappointment to all concerned. It is well to remember that the territories coming within the scheme are vast in extent, that they are administered by a variety of governments with different constitutions and different laws, that the sum total of producers in all the countries concerned are multitudinous, and that they operate under a wide diversity of conditions . . . Moreover, restriction in its severest form—65% of standard production—has only just begun to operate, and there is an inevitable time lag between the first application of a fresh cut and the visible effects of that cut in reduced shipments and diminished stocks. Despite appearances to the contrary, however, we are making progress, and I feel confident that results of the restriction scheme will be soon forthcoming."

LOS ANGELES NEWS

G. G. Balazs has been promoted to the position of chief chemist for the Firestone Tire and Rubber Company of California succeeding Paul Beebe who has been transferred to the Akron plant where he will do special research work. Mr. Balazs is a graduate of the University of Wisconsin and has been acting as assistant to Mr. Beebe since 1931. R. E. Morris has been transferred from the Akron plant to assist in the compounding section of the chemical department.

Social and group activities of the Los Angeles Rubber Group, of the American Chemical Society, have been discontinued for the remainder of the summer due to the fact that so many members are away on vacations.

The members of the Rubber Manufacturers' Association of California have discontinued their monthly meetings until fall, according to Charles N. Merralls, president, who says so many of the members will be absent on vacations that attempted meetings would be impractical.

Work is nearing completion at the factory of the Rubbercraft Corporation of California, Ltd., on improvements that have been under way for some weeks. A new chemical compounding and research room has been partitioned off and fully equipped and three more new presses have been added to keep up with the increasing demand. Both production and sales are showing a 35 per cent increase over those of 1934, according to Charles N. Merralls, president and general manager.

Preparations are being made to handle a 40 per cent increase in demands at the rubber division of the Darnell Corporation, Ltd., at Long Beach, according to V. M. Burrows, chemist in charge of the plant, located at Wardlow and Ocean streets. Three new presses are being added and other equipment in proportion. The Darnell Corporation, Ltd., is now manufacturing solid rubber tires for truck wheels up to 18 inches in diameter, the first of this largest size being turned out late in July and designed especially for use on equipment used in soft ground, the pineapple fields of Hawaii being singled out as offering the first big market. Developments in this plant, noted for its casters with rubber rims, include that of perfecting a resilient solid tire without the disadvantage of a "hill" bulging out immediately ahead of the point of contact or of traction.

Cleanliness in the plant has been brought close to the point of perfection, Mr. Burrows states, by a new system of preparing the master batch of carbon black at night. This permits the opening of the doors to the mill room during the day without dust settling throughout the rest of the plant. The addition of several tray trucks for use in the factory has also helped speed production, while a new oil burner for steam production has improved manufacturing facilities.

Carbon Black Regulations

Regulations concerning the use of sweet gas have been made public by the Texas Railway Commission. These regulations have no direct bearing on the manufacture of carbon black in the Panhandle section of Texas, and are therefore of little interest to the rubber industry. The Commission has not yet announced its regulations covering the use of sour gas, used in carbon black production. Sour gas regulations are expected to be made public in the next several weeks, although they will not be effective until October 1.

Introduce New House Organ

The New Jersey Zinc Company has started publication of a new house organ which is known as The Activator, and is devoted to rubber matters in general. The purpose of the house organ, issued in bulletin form, is to report the results of experiments on the application of zinc oxide and zinc sulphide pigments in the rubber industry as determined by the company's research laboratories. The first issue is devoted largely to the reprinting of "Rate of Cure" charts which have appeared in New Jersey Zinc advertisements during the past two years in the rubber journals.

Exchange Issues New By-Laws

The Commodity Exchange, Inc., New York City, has issued a completely revised edition of its by-laws and rules, containing all amendments up to and including July 29, 1935. Included in the revised edition is also a directory and lists of licensed warehouses, assayers, inspectors, samplers and weighers for the various commodities handled on the Exchange.

Plan Reclaiming Factory

Plans for the erection of a rubber reclaiming plant, to be located at Lopaznia, near Moscow (Russia) have been completed by the Resinoproyekt, the Soviet Union trust for planning new rubber plants. When completed the factory will have an output of 18,000 metric tons annually. In addition to the new factory, production schedules at the Treugolnik plant in Leningrad will be increased by 50 per cent by comprehensive extension of operations.

Rubber Factory for Bombay

A rubber factory sponsored by a European organization with a capital of 50 lakhs ($1,875,000) is to be erected in Bombay, India, for the manufacture of solid rubber tires, sheets, tubes, and other articles. Construction of the factory is expected to start soon. When completed it is believed that the factory will supply practically the entire Indian demand for a large number of rubber products now imported from other countries.

Urge Tires for Used Cars

In an advertising campaign in the trade press, the Goodyear Tire & Rubber Company, Akron, is going after the used car dealers as a new market for tire consumption. The advertising urges dealers to put new Goodyear tires on used cars and thereby heighten the possibilities of early sale. Goodyear Pathfinder or Speedway tires are suggested for this purpose, the advertising telling the dealer that "Twenty or twenty-five dollars usually turns the trick."

MORE RMA DIVISIONS APPROVE STANDARDS

In addition to the hard rubber and footwear divisions two additional units associated with the Rubber Manufacturers Association, i.e., the Rubber Flooring Manufacturers Division and the Heel and Sole Division, have gone on record as approving in principle the continuation of wage and hour policies with respect to the basic 40-hour week, minimum wages, and abolition of child labor, all of which have been in force since the early days of the ill-fated NRA

The Heel and Sole Division embraces more than fifty companies with an annual wholesale value of sales amounting to approximately twenty million dollars. It is believed that additional RMA divisions will also approve the same principles outlined in the near future.

Make Rubber Powder Test

A demonstration of the rubber powder making machine, built under patents controlled by the Rubber Powder Company, of London, was held early in July at the Stork works in Amsterdam. The price of the machine is currently set at £1,500 (about $6,700), but it is hoped to reduce this price to one of more reasonable proportions shortly. The machine, during the demonstration, produced rubber powder at the rate of 100 kilograms per hour. The first of the rubber powder making machines is already in operation in Ceylon. The second one constructed, demonstrated at Amsterdam, is to be shipped to Sumatra.

Discuss Aetna Rubber Future

A series of discussions are being held by directors of the Aetna Rubber Company, of Ashtabula, Ohio, with regard to the future of the company. A report by the Dyer Engineering Company recommending the closing of the Aetna factory for the present was tendered to stockholders recently. The current discussions center around the problem of whether to adopt the industrial engineering company's suggestion, or whether the company should be liquidated, according to report.

Firestone Exhibits Fountain

The singing color fountain featured by the Firestone Tire & Rubber Company during Chicago's World Fair is again on exhibition. The fountain, with its constantly changing colors controlled by music tones, is now on view at San Diego's Exposition on the Pacific Coast. In addition to the fountain, a complete display of Firestone tires and tubes are also on exhibit.

Kleinert Holds Sales Meeting

The annual sales convention of the I. B. Kleinert Rubber Company, College Point, Long Island, New York, was held the week of July 22 at the Waldorf-Astoria Hotel in New York City. Ralph K. Guinzburg, president of the company, was the guest of honor at a dinner held on Wednesday, July 24.

To Make Chlorinated Rubber

The Electric and Electrochemical Company, of Caffaro, Milan, Italy, has applied to the Italian Government for permission to construct a factory for the manufacture of chlorinated rubber, chloronaphthalene, chlorinated oils and resins, and derivatives. Construction is expected to start soon.

Names in the News

Paul W. Litchfield Returns

Paul W. Litchfield, president,, Goodyear Tire & Rubber Company, Akron, returned to this country on July 25 at the completion of a trip around the world during which he visited six Goodyear factories, and officially opened the new factory in Java. He inspected the 93,000-acre rubber plantations owned by Goodyear in Sumatra for the first time. The current year marks Mr. Litchfield's 35th anniversary with Goodyear, having joined the company in 1900 after being graduated from the Massachusetts Institute of Technology, and spending three years in rubber manufacturing operation in New England. He fostered research work in his early years with the company and is noted for his patronage of this phase in the rubber industry. He also instituted a program of education, athletics, collective bargaining, and the like, as far back as 1919, the result of which was the Goodyear Industrial Assembly. Outside of his liberal labor policies Mr. Litchfield is noted for his fostering of the lighter-than-air division of aeronautics. Joining Goodyear as superintendent, he became factory manager in 1911, vice-president in 1915, and has occupied his presidential position since 1926.

DR. RUDOLF H. ULRICH, associated with Firestone since 1927, has joined the staff of the General Tire & Rubber Company, Akron. Prior to joining Firestone he was with the Research and Development Department of the Continental Tire & Rubber Company, of Hanover, Germany.

G. E. BRUNNER has been appointed Manager, Factory Account Sales, for the B. F. Goodrich Company, Akron. He has been associated with the tire industry for almost twenty years, and joined Goodrich in 1929 as sales manager of the Miller tire division.

R. C. MERTZ has been promoted from factory manager to plant manager of the Ohio Rubber Company, Willoughby, Ohio.

WILLIAM O'NEIL, president, General Tire & Rubber Company, Akron, was the only leading rubber executive named in B. C. Forbes' depression honor list made public last month. The list includes business leaders "who have piloted their enterprises successfully through the stormy seas of depression."

DONALD A. FRIES has been named to succeed the late Oliver W. Gill as manager of the New York sales office of the Davol Rubber Company, Providence, R. I. The new appointee has been associated with Davol for many years in a sales capacity.

ROGER FIRESTONE, who was recently graduated from Princeton University, will shortly join the Firestone Tire & Rubber Company in a post yet to be selected. It is probable that his work will be of a research nature since he has been interested in the field of physics for some time.

ARCH MILLER has been appointed packing representative in the Pittsburgh district for the mechanical goods department of U. S. Rubber Products, Inc. He has been located in that district for many years.

Advance Leonard K. Firestone

Leonard K. Firestone, the third of five sons associated with the Firestone Tire & Rubber Company, of which Harvey S. Firestone, Sr., is chairman of the board, was advanced to the post of Trade Sales Manager last month. Following his graduation from Princeton University in 1931, where he was voted by his classmates as the "man most likely to succeed" he entered the Firestone organization starting in the sales and factory training class. For the past two years prior to his new appointment he was vice-president and sales manager of the Firestone California Company.

Leonard K. Firestone

Goodyear Hearing September 16

A special preliminary hearing for the Goodyear Tire & Rubber Company, Akron, for alleged violation of the Clayton anti-trust laws in its contract with Sears, Roebuck & Company, as charged by the Federal Trade Commission, has been set for September 16. The hearing, announced by the Commission, will involve only certain exceptions taken by Goodyear attorneys to the trial examiner's report to the Commission and to his rulings. Examiner Bennett's report is now in the hands of the Commission the members of which will render a final decision.

Faultless Holds Convention

The Faultless Rubber Company, Ashland, Ohio, held a three day sales convention from July 15 to 17, inclusive. Daily conferences were attended by the sales staff, as well as by factory officials and employes. The company entertained sales delegates on the night of July 15 with a dinner at the Ashland Country Club. A golf tournament was another feature of the annual convention.

L. N. GRUELLE, who has been stationed in the Hawaiian Islands for the past nine years in the interests of the General Tire & Rubber Company, as a special representative, visited the Akron headquarters last month.

CONSUMPTION FOR JUNE DROPS 11.9% BELOW MAY

Consumption of crude rubber by manufacturers in the United States for the month of June amounted to 36,623 long tons, which compares with 41,568 long tons for May, 1935. June consumption shows a decrease of 11.9% below May and 8.8% under June, 1934, according to statistics released by the Rubber Manufacturers Association. Consumption for June, 1934, was reported to be 40,147 (revised) long tons.

Imports of crude rubber for June were reported to be 38,340 long tons, an increase of 42.7% above the May figure of 26,866 long tons, but were 22.8% under 49,683 long tons imported in June, 1934.

Total domestic stocks of crude rubber on hand June 30th were 320,470 long tons, which compares with May 31st stocks of 319,281 long tons and 358,461 long tons on hand June 30, 1934.

The participants in the statistical compilation report 55,581 long tons of crude rubber afloat for United States ports on June 30th, compared with 44.375 long tons afloat on May 31st and 46,698 long tons afloat on June 30, 1934.

June reclaimed rubber consumption is estimated at 8,710 long tons; production 8,590 long tons; stocks on hand, June 30, 1935, 17,932 long tons.

TIRE SHIPMENTS IN MAY ARE 20.9% BELOW APRIL

Shipments of pneumatic casings for the month of May, 1935, amounted to 4,067,386 casings, a decrease of 20.9% below April, and was approximately 23.7% under shipments made in May a year ago, according to statistics released by the Rubber Manufacturers Association, Incorporated.

Production of pneumatic casings for May was 4,175,170 casings, a decrease of approximately 7.5% below April and 6.3% under May, 1934.

Pneumatic casings in the hands of manufatcurers on May 31st amounted to 11,130,764 units, an increase of 1.2% above stocks on hand April 30th and practically no change as compared with stocks on hand May 31, 1934.

The actual figures are as follows:

PNEUMATIC CASINGS

	Shipments	*Production*	*Inventory*
May, 1935	4,067,386	4,175,170	11,130,764
April, 1935	5,143,599	4,511,735	11,003,237
May, 1934	5,331,699	4,456,223	11,126,567

Japanese Hear Lectures

Several interesting lectures were delivered before the general meeting of the Society of Rubber Industry of Japan, held in Tokio in April, according to the May, 1935, issue of the *Journal* published by the Society. Two lectures—"On Some Japan-Made New Softeners" and "The Japanese Rubber Industry at Dawn"—were presented, as was a paper on the "Fundamental Studies on the Attributes of Organic Accelerators." A symposium on "Physical Tests of Rubber and Testing Machines" was also held. Another feature of the meeting was the inaugural address by Saitoo-Syohei, of the Tokyo E. C. Kogyo K. K., newly-elected president. The various addresses and lectures are contained in the May, 1935, issue of the *Journal of the Society of Rubber Industry of Japan*, which also includes a booklet containing Standard Methods of Routine Analysis of Rubber Products which were adopted by the Society in March, 1935, as a supplement.

Obituaries

William O. Rutherford

William O. Rutherford, former president of the Pennsylvania Rubber Company, of Jeannette, Pennsylvania, and well-known rubber executive, died on July 18 at the Addison Gilbert Hospital, Gloucester, Massachusetts, after an appendectomy per-

formed on July 13. He had been a summer resident at Gloucester at Brier Neck for the past twenty years, and maintained a winter home at Miami. Born in Fairview, Penna., on October 31, 1874, 61 years ago, Mr. Rutherford joined the office force of the B. F. Goodrich Company in 1900. He quickly displayed an aptitude for selling and was sent to Detroit as the Goodrich sales representative where his success soon earned for him advancement as Western District Manager. Later he was sent to Eastern territory, then back to Akron, where, in 1917, he was made a vice-president. In 1925 he was elected to the presidency of the Rubber Association of America, and also held the same position with the Motor and Accessory Manufacturers Association. During the World War Mr. Rutherford was actively engaged in governmental duties pertaining to the rubber industry. He saw service in Cuba during the Spanish-American War and was a life member of the Society of the Army, Santiago. In 1928 he resigned from Goodrich to assume the presidency of the Pennsylvania Rubber Company, which post he occupied for the next six years, resigning on December 12, 1934. During his six-year regime the Pennsylvania concern showed annual profits consistently. Always actively associated with social organizations Mr. Rutherford was a 32nd degree Mason, a Shriner and a Knight Templar. He was a golf enthusiast and an ardent devotee to baseball activities. The cultivation of flowers was another of his many achievements. Funeral services were held in the Episcopal Church in Salem, Mass., with interment at the Harmony Grove Cemetery, Salem, taking place on July 27. Survivors include a widow, son and father.

William S. Gillespie

William S. Gillespie, formerly associated with the research department of the Goodyear Tire and Rubber Company, died at his home, 1505 Hampton Road, Akron, on July 10 at the age of 72. He had been in declining health for the past three years. Mr. Gillespie was one of the most prominent Masons in Ohio. He leaves three sons, a sister, and two brothers. Burial was made at Galion, Ohio.

Thomas M. Russell

Thomas Macdonough Russell, 62, chairman of the board of the Russell Mfg. Company, Middletown, Conn., makers of webbing and a wide variety of other products, died suddenly of a heart attack at his Middletown home July 30. Born in Middletown, a son of Samuel Russell, for many years head of the Russell company, and a grand-nephew of Thomas Macdonough, "hero of the Battle of Lake Champlain," Mr. Russell was educated at Sheffield Scientific School, Yale University, and spent his early years as a civil engineer. In 1912 he became president of the Russell company, which was founded by the Russell family in 1830. He held the post until 1933 when he was named one of two receivers and the company was reorganized. At the successful termination of the receivership, Mr. Russell was elected chairman of the board. He was very active in political and fraternal life. He served as mayor of Middletown, was a member of the state legislature for a time and served both as a delegate to Republican national conventions and as a presidential elector. He held many directorships, was active in Middletown civic life and was a member of several Masonic orders. Surviving are his wife, a son, a married daughter, a sister and a half-sister.

Arthur D. Little

Dr. Arthur D. Little, one of this country's foremost industrial chemists and founder of the Cambridge testing laboratory of Arthur D. Little, Inc., died suddenly from a heart attack while vacationing at the Rock Inn, Northeast Harbor, Maine. He was 73 years old. Dr. Little was born and educated in Boston, and was graduated from the Massachusetts Institute of Technology. His entire life was devoted to applied chemistry and he received nearly every honor open to chemists. He was a past president of the American Chemical Society and was the only American chemist ever to be elected president of the British Society of Chemical Industry. In 1931 he was awarded the Perkins medal, one of the highest awards granted to chemists. Dr. Little was associated with several scientific societies and belonged to many social organizations.

Richard Tomkinson

Richard Tomkinson, connected with the traffic department of the Goodyear Tire & Rubber Company for 32 years, died on July 20 at the People's Hospital, in Akron, at the age of 62, following a one week illness. He was a brother of Thomas B. Tomkinson, Goodrich comptroller, and LeRoy Tomkinson, a Goodyear plant superintendent. Surviving are these two brothers, a widow, two daughters, two sisters, and three other brothers. Burial was in Rose Hill Cemetery, Akron.

Henry Z. Cobb

Henry Z. Cobb, development engineer for the U. S. Rubber Company, a post he occupied for 28 years, died on July 26, at the age of 68, in the Homeopathic Hospital, Providence, R. I. Funeral services were held at the home of his son, Henry B. Cobb, at 5 North Dearborn Avenue, North Providence. Burial was in the family crypt in the Roger Williams Mausoleum, in Oakland Cemetery, Providence.

Tire Factory for Uruguay

For the purpose of manufacturing automobile tires and tubes, and other rubber articles, a limited liability company has been organized in Montevideo, Uruguay, South America, with production expected to begin sometime late in 1935. The new organization is being financed by Uruguayan capital. According to Consul General Leslie E. Reed, of Montevideo, important privileges probably will be obtained by the new company under various Uruguayan laws for the encouragement of domestic industries, including exemption from the basic customs duties for raw materials used, increased customs duties on imported tires, and probably a nine-year monopoly on the manufacture of tires in the country.

New Rubber Softener

Recent experiments conducted in Moscow, Russia, have shown that sapropel tars may successfully be substituted for Rubrax, a softener used in rubber compositions, as well as for stearic acid for purposes of increasing the activity of vulcanization accelerator. According to the June 20 *News Edition* of *Industrial & Engineering Chemistry,* it has also been determined that the presence of sapropel tar in rubber products increases durability and retards aging during storage.

Transfer Rubber Exhibition

The Rubber Exhibition, sponsored by the Rubber Growers Association, of London, has been transferred from the Science Museum of London, where it has been on view for the past six months, to the Central Library, in Manchester. British rubber manufacturers from all parts of the United Kingdom contributed to the many displays which make up the complete exhibition which is intended to acquaint laymen with the value of rubber.

Goodyear Acquires New Land

The Goodyear Plantations Company, subsidiary of the Goodyear Tire & Rubber Company, has acquired 2500 acres of land in the province of Colon, near the Panama Canal, for the purpose of developing a rubber plantation, according to American Commercial Attaché Robert G. Glover, of Panama. Goodyear has been interested in the Canal Zone region for some time. Clearing of the new land is already under way, and houses for workmen are rapidly being constructed.

Wilson Strike Continues

Although a number of conferences have been held between the management of the Wilson Rubber Company, Canton, Ohio, and striking workers, the strike called on June 17 continues. The factory has been closed for the last several weeks to avoid any possible violence. Wilson employs about 170 persons normally.

New Rubber Goods

Featherlike Bag Pump

One of the most diversified products yet introduced for use by outdoor-minded people is the Featherlike Bag Pump featured by the Featherlike Pneumatic Prod-

ucts Company, of Los Angeles, Calif. It is a combination of waterproof dunnage bag, air mattress pump, water tank, and shower bath, and is made of 10 oz. rubberized duck. A hose attachment is furnished with the bag by means of which air may be pumped into it, or it may act as a shower spray. A valve cap at the bottom of the bag serves as the water outlet or air inlet. In the accompanying illustration the small circle shows the bag inflated for use as an air mattress; the larger circle as a dunnage bag; and, third, as a shower bath.

Floor Covering Uses Latex Back

The Clinton Carpet Company, Chicago, has recently introduced a new wide seamless floor covering under the term of Amhaco Broadfelt. It is made of all hair construction, punched through two layers of burlap by a special needle machine to give closer texture. The two layers of burlap are used to give greater strength to the product. The hair is tied into the burlap by means of latex which makes it impossible to pull the hair away from the burlap. The latex also forms a selvage any place the floor covering is cut thereby avoiding binding, serging, or overcasting of raw edges. Amhaco Broadfelt is available in twelve different colors.

Barr Rubber Toy Trucks

In addition to its line of Ford V-8 miniature automobiles, the Barr Rubber Products Company, Sandusky, Ohio, is also featuring several miniature truck models.

Tiny details, such as door handles, radiator grills, and the like, are all reproduced on these colorful molded models. Wheels are sturdily mounted with plated hubs; colors are varied; and finishes are sparkling and non-cracking. The trucks are of complete rubber construction, the only exception being the hubs and axles.

A Rubberized Folding Boat

Folding boats which make use of rubberized fabrics in their construction are being manufactured under the trade name of Folbot by J. Kissner, of Long Island City, N. Y. They are built under the patent licenses of the German-made "Faltboot." Light in weight, the framework consists of seasoned ash, and the fittings are of solid brass, while all parts are heavily varnished. The hull consists of heavy-woven fabrics specially rubberized, making it water-proof and rot-proof, giving good resistance, flexibility, seaworthiness, and long life. The stem and stern are rubberized together with the hull, thus securing water-tightness and preventing any

damage to the hull or frame when striking ground or rocks. Owing to its construction the Folbot is practically non-capsizable because its center of gravity is below the water line, which makes overturning almost impossible. When not in use this Folbot is folded in sections and packed in two portable carrying bags. There are a number of Folbot styles available.

U. S. Super Royal Cord Hose

A new type of hose for pneumatic tool and air drill service, termed the U. S. Super Royal Cord, has been introduced by the Mechanical Goods Division of U. S. Rubber Products, Inc. Built like a tire, the new hose features "tire-like" cords laid in tough rubber cushions isolated from adjacent plies to prevent rubbing or shearing. For additional protection against the destructive action of hot oil in the air line, the tube of the hose is made of oil-resistant rubber. It is claimed that the carcass of the hose shows remarkable resistance to external blows, bruises, and abrasions.

Oak Rubber Dancing Clown

A new type of balloon, under the name of the Dancing Clown, has been introduced by the Oak Rubber Company, Ra-

venna, Ohio. It consists of a balloon head of rubber, and crepe paper body, arms and legs. Manipulation of a string tied to the top of the head causes the Dancing Clown to "dance" amusingly. Each balloon is packed in a plain, glassine envelope.

General One-Piece Rubber Drum

An innovation in acid-carrying containers has been introduced by the General Tire & Rubber Company, Akron, in the form of an unbreakable one-piece rubber drum. The body portion of the drum is a composition of rubber and cotton fabric. The plug, or bung, is made of ebonite. It is lined with pale crepe rubber, and is a laminated structure molded together in one homogeneous mass. The rubber drum is intended to hold many of the acids besides those which are regarded as dangerous and the transportation of which is regulated

by the U. S. Bureau of Explosives. Advantages of this drum include a reduced freight cost for the user, easier handling, elimination of breakage, accident prevention in handling, saving of storage space, and many others. The General rubber drums are being nationally distributed by Maurice A. Knight, of Akron.

MARKETS

RUBBER—COTTON AND FABRICS—CHEMICALS

NEW YORK, AUGUST 8, 1935

Crude Rubber

EVENTS affecting the crude rubber situation in the past month continued on a disappointing plane with the result that prices continued a downward march with but few upward movements. High for the month on the Exchange was 12.27 for spot on July 9; low for spot was reached on July 24 with an 11.75 price quoted. A drop of 13 points on July 19 resulted in spot rubber being quoted below 11 cents on the Exchange for the first time since late May. The downward movement was hastened by the consumption and stock report for June, which was unfavorable and totally unexpected. Immediately upon publication of this report prices declined to new lows in the current movement. Rumors concerning the possible devaluation of the Dutch guilder strengthened the price of spot once or twice, but prices reacted when no action was taken by the Dutch government. It is believed in some quarters, however, that the price decline is a lull before the storm, with a quick rise visualized shortly. Quotations in the outside market, Exchange, London and Singapore, follow:

As of August 8

Plantations—

Ribbed Smoked Sheets—			
No. 1, Spot	—	@	.12
October-December	—	@	.12 1/16
No. 2	—	@	.11 3/4
No. 3	—	@	.11 5/8
No. 4	—	@	.11 1/2
Thin Latex Crepe	—	@	.12 1/8
Thick Latex Crepe	—	@	.12
Brown Crepe, No. 1	—	@	.11 3/4
Brown Crepe, No. 2	—	@	.11 5/8
Amber Crepe, No. 2	—	@	.11 3/4
Amber Crepe, No. 3	—	@	.11 5/8
Amber Crepe, No. 4	—	@	.11 1/2
Brown Crepe, Rolled	—	@	.10 3/4

Latex—

Liquid Latex, per gal.	.50	@	.51

Paras—

Up-River, fine	—	@	.09 3/4
Acre Bolivian, fine	—	@	.10
Balata—			
Block, Ciudad	—	@	.32

LONDON MARKET

Standard Smoked Sheets—Buyers—August 8

August	—	@	5 11/16d
Oct.-Dec.	—	@	5 7/8d

SINGAPORE MARKET

Standard Smoked Sheets—Sellers—August 8

August	—	@	5 1/16d
Oct.-Dec.	—	@	5 3/16d

Reclaimed Rubber

Production of reclaimed rubber continues on a satisfactory scale with current consumption being rapidly absorbed by customers on contract. It is understood that many users are contracting for deliveries for the balance of the year although prices remain unchanged since our last report. Current quotations follow:

High Tensile

Super-reclaim, black lb.	.08 3/4	@	.09
High Tensile Red lb.	.07	@	.07 3/4

Shoe

Unwashed lb.	.06 1/2	@	.06 3/4
Washed lb.	.08	@	.09

Tube

No. 1 (Floating) lb.	.13	@	—
No. 2 (Compounded) lb.	.07 1/4	@	.07 3/4

Tires

Black lb.	.05	@	.05 1/4
Black, selected tires lb.	.05 1/4	@	.05 1/2
Dark Gray lb.	.06 1/4	@	.06 1/2
White lb.	.09 1/4	@	.09 1/2
Truck, Heavy Gravity lb.	.05 1/2	@	.06
Truck, Light Gravity lb.	.06	@	.06 1/4

Miscellaneous

Mechanical blends lb.	.04 1/4	@	.04 1/2

Scrap Rubber

Though the scrap market has been dull lately, especially for tire scrap, conditions have shown recent improvement. Reclaimers are active with demands increasing. Collections are better during the Summer and stocks are higher. Tire scraps are slightly lower with tubes higher. Quotations follow:

(Prices to Consumers)

Auto tire peelings ton	16.00	@	18.00
Mixed auto ton	7.00	@	8.00
Clean solid truck tires ton	33.50	@	35.00
Boot and shoes ton	18.00	@	20.00
Arctics, untrimmed ton	14.00	@	16.00
Inner tubes, No. 1 lb.	.07 1/2	@	.07 5/8
Inner tubes, No. 2 lb.	.03 1/8	@	.03 1/4
Inner tubes, Red lb.	.02 3/8	@	.02 7/8

Cotton

Because of indecision with regard to possible Government action, plus the action of the Massachusetts Circuit Court of Appeals in finding the AAA unconstitutional, cotton prices dropped slowly during the latter half of July and the early part of August, after starting off on a favorable footing since our last report. High for the period was recorded on July 10 with a 12.45 price quoted, while a new low in the last several months was reached today (August 8), viz: 11.65. Price of spot cotton broke 20 points from August 7 to August 8 because of the Government's publicized estimate of 11,789,000 bales for 1935 production. This estimate is based on one of the highest indications of yield per acre that the Crop Reporting Board has shown for this stage of the season. Because this production estimate was taken to indicate that the Administration did not contemplate announcing a new loan crop until September, prices broke sharply. Quotations for middling uplands on the N. Y. Cotton Exchange follow:

	July 8 Close	August 8 High	August 8 Low	August 8 Close
August	——	11.12	11.12	11.12
October	11.64	11.41	11.02	11.12
December	11.62	11.33	10.93	11.03

Tire Fabrics

(Prices Net at the Mill—Process Tax Included)

Peeler, carded, 23/5/3 lb.	.33 1/2	@	.33 3/4
Peeler, carded, 23/4/3 lb.	.34 1/2	@	.34 3/4
Peeler, carded, 15/3/3 lb.	.31 1/2	@	.31 3/4
Peeler, carded, 13/3/3 lb.	.30 1/2	@	.30 3/4
Egyptian, carded, 23/5/3 lb.	.46 3/4	@	.46 3/4
Egyptian, combed, 23/5/3 lb.	.51 3/4	@	.51 3/4
CHAFERS			
Carded, American, 1 1/16" lb.	.34 1/2	@	.35 1/2
Carded, American, 1" lb.	.30	@	.32
LENO BREAKER			
Carded, American, 1 1/16" lb.	.35	@	.36
Carded, American, 1" lb.	.31	@	.32

Sheetings

Count	Width	Weight			
48x40	36 in.	5.50 lb.	—	@	.05 1/8
40x40	36 in.	6.15 lb.	—	@	.04 3/4
40x36	36 in.	6.50 lb.	—	@	.04 1/2
48x48	40 in.	2.50 lb.	—	@	.10 1/2
48x48	40 in.	2.85 lb.	—	@	.09
56x60	40 in.	3.60 lb.	—	@	.08 1/4
48x44	40 in.	3.75 lb.	—	@	.07 3/4
44x40	40 in.	4.25 lb.	—	@	.06 3/8

Ducks

Enameling lb.	.32	@	.37 1/2
Belting and Hose lb.	.34	@	—
Single filling, A grade lb.	.16 3/4	@	.17 1/4
Double filling lb.	.17 3/4	@	.18 1/4

Closing Rubber Prices on New York Commodity Exchange, Inc.

No. 1 Standard Contract of 10 tons

FROM JULY 9 TO AUGUST 8

Date	Spot	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July Sales
July 9	12.27	12.29	12.36	12.43	12.50	12.57	12.65	12.72	12.78	12.85	12.92	12.99	13.06	183
10	12.25	12.23	12.31	12.40	12.47	12.54	12.61	12.68	12.75	12.82	12.88	12.95	13.03	69
11	12.18	12.18	12.24	12.30	12.38	12.46	12.54	12.61	12.68	12.75	12.80	12.86	12.93	141
12	12.16	12.13	12.19	12.25	12.33	12.41	12.49	12.57	12.63	12.69	12.74	12.80	12.87	43
13	——	——	——	——	——	——	——	——	——	——	——	——	——	—
14	——	——	——	——	——	——	——	——	——	——	——	——	——	—
15	12.27	12.25	12.31	12.38	12.44	12.51	12.58	12.64	12.71	12.79	12.85	12.91	12.98	132
16	12.06	12.02	12.08	12.15	12.22	12.29	12.36	12.45	12.51	12.58	12.64	12.70	12.77	236
17	12.18	12.16	12.22	12.28	12.35	12.42	12.50	12.58	12.64	12.70	12.76	12.83	12.90	50
18	12.07	12.04	12.10	12.16	12.23	12.30	12.38	12.46	12.52	12.58	12.64	12.71	12.78	94
19	11.94	11.95	12.00	12.05	12.12	12.19	12.27	12.35	12.42	12.50	12.55	12.61	12.68	168
20	——	——	——	——	——	——	——	——	——	——	——	——	——	—
21	——	——	——	——	——	——	——	——	——	——	——	——	——	—
22	11.97	11.91	11.96	12.01	12.08	12.15	12.23	12.31	12.39	12.47	12.52	12.58	12.65	136
23	11.97	11.91	11.95	11.99	12.05	12.12	12.20	12.28	12.33	12.39	12.46	12.52	12.59	176
24	11.75	11.71	11.77	11.83	11.89	11.96	12.03	12.10	12.16	12.24	12.30	12.36	12.42	258
25	11.84	11.84	11.87	11.91	11.98	12.05	12.12	12.20	12.27	12.35	12.41	12.47	12.54	138
26	11.81	11.71	11.76	11.82	11.89	11.96	12.03	12.08	12.16	12.24	12.30	12.36	12.42	162
27	——	——	——	——	——	——	——	——	——	——	——	——	——	—
28	——	——	——	——	——	——	——	——	——	——	——	——	——	—
29	11.87	11.87	11.88	11.98	12.05	12.12	12.19	12.24	12.31	12.39	12.45	12.52	12.59	102
30	11.94	11.90	11.90	12.01	12.07	12.14	12.21	12.29	12.35	12.42	12.47	12.52	12.58	182
31	12.12	——	12.12	12.22	12.28	12.35	12.42	12.50	12.56	12.63	12.69	12.75	12.82	284
Aug. 1	12.12	——	12.11	12.21	12.28	12.35	12.42	12.48	12.56	12.64	12.69	12.75	12.82	12.89 237
2	12.15	——	12.13	12.22	12.30	12.37	12.44	12.50	12.58	12.66	12.71	12.77	12.83	12.90 144
3	——	——	——	——	——	——	——	——	——	——	——	——	——	—
4	——	——	——	——	——	——	——	——	——	——	——	——	——	—
5	12.16	——	12.14	12.23	12.30	12.37	12.45	12.51	12.59	12.67	12.73	12.79	12.86	12.93 45
6	12.12	——	12.08	12.16	12.23	12.30	12.38	12.47	12.53	12.60	12.66	12.72	12.78	12.85 149
7	11.90	——	11.88	11.96	12.03	12.10	12.17	12.23	12.30	12.38	12.44	12.50	12.57	12.64 191
8	11.94	——	11.92	12.00	12.07	12.14	12.21	12.27	12.34	12.42	12.47	12.53	12.58	12.64 150

Rubber CHEMICAL Markets

NEW YORK, AUGUST 9, 1935

[All Quotations F.O.B. Works Unless Otherwise Noted]

ACCELERATORS

Organic			
A-1 (Thiocarbanilid)	lb.	.21 @	.25
A-5-10	lb.	.33 @	.36
A-7	lb.	.53 @	.65
A-11	lb.	.60 @	.75
A-16	lb.	.55 @	.65
A-19	lb.	.56 @	.75
A-32	lb.	.70 @	.80
A-17	lb.	— @	—
Aldehyde ammonia, crystals	lb.	.65 @	.67
Altax	lb.	— @	—
Captax	lb.		
Crylene	lb.	.55 @	.65
paste	lb.	.45 @	.55
Di-Ortho-Tolyguanidine	lb.	.44 @	.47
Diphenylguanidine	lb.	.35 @	.37
Ethylidene aniline	lb.	.45 @	.47½
Formaldenyde aniline	lb.	.37½ @	.42
Guantal	lb.	.42 @	.51
Heptene	lb.	.40 @	—
Hexamethylene-tetramine	lb.	.37 @	—
Lead Oleate, No. 999	lb.	.13 @	—
Witco	lb.	.11 @	—
Lithex	lb.	.18 @	.20
Methylenedianiline	lb.	.36 @	.37
Monex	lb.	3.25 @	—
Oxynone	lb.	.68 @	.80
Phenex	lb.	.50 @	.55
Pipsolene	lb.	3.55 @	4.00
R & H 40	lb.	.40 @	.41
R & H 50	lb.	.40 @	.41
R-2	lb.	1.55 @	1.90
Safex	lb.	1.20 @	1.25
SPDX	lb.	.75 @	—
Super-Sulphur No. 1	lb.		
No. 2	lb.		
Thiocarbanilid, drums	lb.	.21 @	.25
Trimene	lb.	.75 @	—
base	lb.	1.20 @	—
Triphenylguanidine	lb.	.58 @	.60
Tuads	lb.		
Ureka	lb.	.62 @	1.00
Ureka B	lb.	— @	—
Ureka C	lb.	.58 @	.69
Vulcanex	lb.		
Vulcone	lb.		
Vulcanol	lb.		
Z-88-P	lb.	.48 @	.60
Zimate	lb.		
Inorganic			
Litharge, domestic	lb.	.06½ @	—
Magnesia, calcined, heavy	ton	60.00 @	65.00

COLORS

Blacks (See Compounding Materials)

Blues			
Prussian	lb.	.37 @	.39
Ultramarine	lb.	.12 @	.14
Browns			
Sienna, Italian	lb.	.06 @	'13
Umber, Turkey	lb	.04 @	.04½
Greens			
Chrome, light	lb.	.20 @	.30
medium	lb.	.21 @	.31
Chromium Oxide, bbl.	lb.	.22 @	.23
Guignet's Green	lb.	.75 @	—
Reds			
Antimony			
crimson, 15/17	lb.	.48 @	—
sulfur, free	lb.	.48 @	.60
Indian English	lb.	.09 @	.10
Domestic (Maroon)	lb.	.11 @	—
Red oxide, pure	lb.	.10 @	.12
Rub-Er-Red, f.o.b Easton	lb.	.09½ @	—
Whites			
Cryptone CB, No. 21	lb.	.06 @	.06¼
Cryptone, No. 19	lb.	.06 @	.06¼
Cryptone, ZS-20	lb.	.10½ @	.10¾
Cryptone, ZS-86	lb.	.10½ @	.10¾
Lithopone			
Albalith, black label—11 lb.		.04½ @	.04¾
Azolith	lb.	.04½ @	.04¾
Rayox	lb.		
Titanium oxide	lb.	.17 @	.19
Titanox B	lb.	.06 @	.06½
Titanox C	lb.	.06 @	.06½
Zinc Oxide—American Process			
American Azo:			
ZZZ (lead free)	lb.	.05¾ @	.06
ZZ (leaded)	lb.	.05½ @	.05¾
Horsehead Lead Free Brand:			
Special—3	lb.	.05¾ @	.06
XX Red—4	lb.	.05¾ @	.06
XX Red—72	lb.	.05¾ @	.06
XX Red—78	lb.	.05¾ @	.06
XX Red—103	lb.	.05¾ @	.06
U. S. P.—X, bbls.	lb.	.12½ @	.12¾
Kadox, black label—15	lb.	.09½ @	.09⅝
Blue label—16	lb.	.08¾ @	.08⅝
Red label—17	lb.	.07 @	.07¼
St. Joe, black label	lb.	.05¾ @	.06
green label	lb.	.05¾ @	.06
red label	lb.	.05¾ @	.06
Zinc Oxide—French Process			
Anaconda, lead free	lb.	.05¾ @	.06
Anaconda, selected lead free	lb.	.06 @	.06¾
Florence White seal—7 bbls.	lb.	— @	.10½
Green seal—8	lb.	.09½ @	.09½
Red seal—9	lb.	.08½ @	.08½
Yellows			
Chrome	lb.	.15 @	.16
Ocher, dom. med.	lb.	.02¾ @	—

BLACKS

Arrow "Aerfloted" Specification	lb.	.0535 @	.0825
Bone, powdered	lb.	.05½ @	.12½
Carbon, compressed	lb.	.0535 @	.0825
uncompressed	lb.	.0535 @	.0825
"Certified," Cabot	lb.	.0535 @	.0825
Spherons	lb.	.0535 @	.0825
"Disperso"	lb.	.0535 @	.0825
Drop, bbls.	lb.	.05½ @	.14
"Excello," compressed	lb.	.0535 @	.0825
"Fumonex"	lb.	.03 @	.07
"Gastex"	lb.	.03 @	.07
Lampblack	lb.	.07 @	.12
"Micronex"	lb.	.0535 @	.0825
"Supreme"	lb.	.0535 @	.0825
Thermatomic—"P 33"	lb.	— @	—
"Thermax"	lb.	— @	—
United "Dixie" & "Kosmos"	lb.	.0535 @	.0825

COMPOUNDING MATERIALS

Aluminum Flake	ton.	21.85 @	24.50
Ammonia carbonate, lump	lb.	.10½ @	.12
Asbestine	ton	14.00 @	15.00
Barium carbonate (98-100%)	ton	56.50 @	61.50
Barium Dust	lb.	.05 @	.06
Barytes	ton	22.00 @	24.00
Basofor	lb.	.04½ @	—
Bentonite	lb.	.02 @	.03
Blanc fixe dry f.o.b. works	ton	70.00 @	75.00
Calcene	ton	35.00 @	43.00
Catalpo (fact.)	lb.	.02 @	—
Chalk, precipitated			
Suprex white, extra lt.	ton	45.40 @	60.00
heavy	ton	45.00 @	55.00
Clay, Kaolin, domestic	ton	7.50 @	15.00
Aerfloted, Suprex	ton	8.50 @	10.00
Congaree	ton	9.00 @	—
Dark Blue Ridge	ton		
Dixie	ton		
Dixie, Jr.	ton		
Lexington	ton	10.00 @	22.00
McNamee	ton		
Par	ton		
Tensulite	ton	15.00 @	—
Witco	ton	8.50 @	9.00
Cotton Flock	lb.	.10½ @	.18
Glues, extra white	lb.	.28 @	.30
medium white	lb.	.14 @	.19
Kalite No. 1	ton	30.00 @	55.00
Kalite No. 3	ton	40.00 @	65.00
Magnesium carbonate	lb.	.08 @	—
Mica	ton	65.00 @	80.00
Rottenstone (powdered)	lb.	.02½ @	.05
Soapstone, powdered	ton	16.00 @	22.00
Starch, powdered	cwt.	3.56 @	3.76
Talc, domestic	ton	12.00 @	15.00
Pyrax A	ton		
Whiting, commercial	ton	17.00 @	18.00
Columbia Filler	ton	9.00 @	14.00
English Cliffstone	ton	33.00 @	43.00
Sussex	ton		
Witco	ton	15.00 @	—
Wood Flour	ton	18.00 @	30.00
Zinc Carbonate	lb.	.10½ @	.11
Zinc Stearate	lb.	.26 @	—

MINERAL RUBBER

Black Diamond	ton	27.00 @	—
Genasco, solid (factory)	ton	25.00 @	27.00
Hard Hydrocarbon	ton		
Parmr, solid	ton	25.00 @	28.00
Pioneer, M.R. solid	ton		
Pioneer-granulated	ton		

SPECIALTIES

Aromatics—Rodo	lb.		
Para-Dors No. 5145	lb.	2.00 @	—
Sunproof	lb.	.35 @	.37½
Sponge Paste	lb.	— @	.80
Tonox	lb.	.56 @	.60

SOFTENERS

Acids			
Acetic, 28%, bbls.	100 lb.	2.45 @	2.70
glacial, USP, bbls.	100 lb.	14.00 @	—
Nitric, 36 degrees	cwt.	5.00 @	6.00
Sulfuric, 66 degrees	ton	15.50 @	16.50
Acids, Fatty			
Laurex	lb.	.15 @	.16
Stearex	lb.	.08½ @	.13
Stearic, double pressed	lb.	.09 @	.14
Alkalies			
Caustic Soda, 76%	cwt.	3.60 @	3.75
Soda Ash, 58% C.L.	cwt.	2.52 @	—
Oils			
Corn, refined, bbls.	lb.	.12⅛ @	—
Cottonseed, crude	gal.	.093 @	.10
Cycline Oil	gal.	.15 @	.28
Degras (c.l. 100 bbls.)	lb.	.02¾ @	—
Less c.l. (10-25 bbls.)	lb.	.03 @	—
Lots less than 10 bbls.	lb.	.03¼ @	—
Fluxrite	lb.	.05½ @	.06½
Palm Lagos	lb.	.05 @	—
Niger	lb.	.04¾ @	—
Para-Flux	gal.	.17 @	—
Petrolatum, light	lb.	.02 @	.02½
Pigmentaroil, tank cars	gal.	.16 @	—
in drums	gal.	.22 @	.23½
Pine, steam distilled	gal.	.64 @	.65
dest. dist., drums	gal.	.40 @	.45
Rosin Oil, cmpd	gal.	.40 @	—
Rubtack	lb.	.40 @	—
Seedine, c.l.	lb.	.07¼ @	—
Tackol	lb.	.08½ @	.18
Witco Palm Oil	lb.	.05 @	—
Witco Softener (f.o.b. wks.)	gal.	.15 @	—
Woburn No. 8, c.l.	lb.	.06 @	—
Wobonite, c.l.	lb.	.05 @	—
Resins and Pitches			
Pitch, Burgundy	lb.	.07 @	.08
coal tar	gal.	.07½ @	.08
hardwood	ton	25.00 @	30.00
pine, 200 lb. gr. wt.	bbl.	6.50 @	—
Rosin, grade K, 280 lb.	bbl.	5.55 @	—
Pigmentar, tank cars	gal.	.19 @	—
in drums	gal.	.25 @	.27
R. S. L. Resin	lb.	— @	—
Retort Pine Tar, drums.	bbl.	12.00 @	13.00
Solvents			
Acetone, pure	lb.	.12½ @	.13½
Alcohol, denatured, methanol, No. 1 bbls.	gal.	.29½ @	—
Benzene, 90%	gal.	.15 @	.24
Beta-Trichlorethane	gal.	— @	—
Bondogen		— @	—
Carbon, bisulfide	lb.	.05½ @	.06
Carbon, tetrachloride	lb.	.05 @	.05¾
Dichlorethylene	lb.	.29 @	—
Dipentene, cml., drums.	gal.	.41 @	.44
Dryolene (f.o.b. Okla.)	gal.	.10 @	.10½
Ethylene dichloride	lb.	.05½ @	.06½
Gasoline, steel bbls.	gal.	.16 @	—
Naphtha, solvent	gal.	.26 @	.31
Plastogen	lb.		
Reogen	lb.		
Rub-Sol (f.o.b. Okla.)	gal.	.09 @	—
Trichlorethylene	lb.	— @	.09½
Turpentine, spirits	gal.	.46½ @	.50½
dest. dist., drums	gal.	.45 @	.48
Waxes			
Beeswax, white	lb.	.40 @	.41
Carnauba, yellow	lb.	.39 @	.40
Ceresin, white, dom.	lb.	.08 @	.11
Montan, crude	lb.	.10 @	.11
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
Paraffin (c.l.—f.o.b. N. Y.)			
Yellow crude scale	lb.	.02 @	.02½
White crude scale 124/126	lb.	.02 @	.02⅛
Refined, 125/127	lb.	.03¾ @	.04

ANTI-OXIDANTS

AgeRite, Gel	lb.		
HP	lb.		
Powder	lb.		
Resin	lb.		
White	lb.		
Albasan	lb.	.70 @	.75
Antox	lb.		
B-L-E	lb.	.57 @	.60
Electol-H	lb.	— @	—
Electol White	lb.	— @	—
Electol B	lb.	— @	—
Neozone	lb.		
Oxynone	lb.	.66 @	.90
Retardex	lb.	.35 @	.40
Stabilite	lb.	.57 @	.62
Stabilite Alba	lb.	.70 @	.75
VGB	lb.	.55 @	.60

MOLD LUBRICANTS

Aresklene	lb.	— @	—
Cocoa Soapstock	lb.	.06 @	.08
Dipex	lb.	.06 @	.08
Rusco, f.o.b. Nitro	lb.	.12 @	.30
Sericite, f.o.b. N. Y.	ton	65.00 @	—
Soap Tree Bark, cut, sifted	lb.	.06 @	.08
Zip (Mold Wash)	lb.	— @	—

FACTICE OR RUBBER SUBSTITUTES

Amberex	lb.	.23 @	—
Black	lb.	.08½ @	—
White	lb.	.08 @	.12
Brown	lb.	.07 @	.11½
Duphax	lb.	.09½ @	—

VULCANIZING INGREDIENTS

Sulfur Chloride, yellow (drs.)	lb.	.03½ @	.04
Sulfur flour.			
Refined, 100% pure (bags)	cwt.	3.45 @	—
Commercial (bags)	cwt.	1.95 @	2.80
Tellov	lb.		
Vandex	lb.		

Crude Rubber
Latex and Guayule
Reclaimed Rubber
Tires and Tubes

STATISTICS OF THE INDUSTRY

Rim Production
Automobiles
Gasoline
Cotton Prices

U. S. Imports and Exports of Crude Rubber

YEARS	Gross Imports: Long Tons	Gross Imports: Total Declared Value	Gross Imports: Average Declared Value per pound Cents	Re-exports: Long Tons	Re-exports: Total Declared Value	Re-exports: Average Declared Value per pound Cents	Net Imports: Long Tons
1922	**301,076**	**101,843,188**	**15.10**	**4,809**	**1,921,828**	**17.84**	**296,267**
1923	**309,144**	**185,060,304**	**26.72**	**8,772**	**5,672,319**	**28.87**	**300,372**
1924	**328,056**	**174,231,331**	**23.71**	**10,309**	**6,057,637**	**26.23**	**317,747**
1925	**396,642**	**429,705,014**	**48.36**	**14,827**	**19,847,753**	**59.76**	**381,815**
1926	**413,338**	**505,817,807**	**54.63**	**17,671**	**22,470,583**	**56.77**	**395,667**
1927	**426,258**	**339,874,774**	**35.60**	**27,775**	**24,735,488**	**39.76**	**398,483**
1928	**439,731**	**244,854,973**	**25.03**	**32,159**	**18,128,361**	**25.17**	**407,572**
1929	**560,084**	**239,178,783**	**19.15**	**36,485**	**16,868,733**	**20.64**	**523,599**
1930	**482,082**	**139,134,330**	**12.89**	**30,205**	**9,316,205**	**13.77**	**451,877**
1931	**497,138**	**72,918,949**	**6.54**	**25,595**	**4,255,472**	**7.42**	**471,543**
1932	**409,584**	**31,936,459**	**3.47**	**20,929**	**2,015,612**	**4.30**	**388,655**
1933	**407,817**	**44,034,064**	**4.82**	**20,537**	**2,601,352**	**5.65**	**427,280**
1934	449,322	97,898,519	10.06	23,848	5,770,109	11.23	425,615
1933:							
July	**44,625**	**4,293,111**	**4.29**	**1,419**	**219,945**	**6.92**	**43,206**
August	**44,257**	**5,391,709**	**5.44**	**2,205**	**302,132**	**6.12**	**42,052**
Sept.	**44,912**	**6,110,956**	**6.07**	**2,369**	**335,798**	**8.89**	**42,543**
Oct.	**44,474**	**6,115,330**	**6.14**	**2,669**	**397,167**	**6.64**	**41,805**
Nov.	**40,582**	**5,850,714**	**6.44**	**2,188**	**333,631**	**6.81**	**38,394**
Dec.	**39,461**	**5,869,556**	**6.75**	**1,888**	**293,690**	**6.94**	**37,573**
1934:							
Jan.	**47,963**	**7,403,123**	**6.89**	**1,975**	**352,116**	**7.96**	**45,988**
Feb.	**34,335**	**5,262,711**	**6.84**	**2,133**	**476,232**	**9.97**	**32,202**
Mar.	**41,119**	**6,765,173**	**7.34**	**2,947**	**583,313**	**8.83**	**38,172**
April	**43,841**	**8,232,746**	**8.37**	**2,814**	**588,453**	**9.18**	**41,027**
May	**48,494**	**10,001,239**	**9.21**	**2,389**	**544,212**	**10.17**	**46,105**
June*	**47,289**	**10,747,464**	**10.14**	**2,012**	**501,499**	**11.33**	**45,277**
July	**41,443**	**9,670,617**	**10.41**	**2,366**	**660,199**	**13.99**	**39,077**
August	**31,531**	**7,873,690**	**11.15**	**1,393**	**400,433**	**12.83**	**30,138**
Sept.	**31,074**	**8,293,859**	**11.92**	**1,665**	**474,446**	**12.72**	**29,409**
Oct.	**28,318**	**8,203,447**	**12.93**	**2,058**	**620,754**	**13.46**	**26,260**
Nov.	**36,325**	**10,470,076**	**12.87**	**1,230**	**327,672**	**11.89**	**35,095**
Dec.	**17,590**	**4,974,374**	**12.62**	**866**	**240,780**	**12.46**	**16,724**
1935:							
Jan.	**39,675**	**10,852,308**	**12.21**	**977**	**278,229**	**12.72**	**38,698**
Feb.	**47,271**	**12,291,242**	**11.61**	**1,845**	**480,440**	**11.62**	**45,426**
March	**45,350**	**11,801,152**	**11.62**	**1,868**	**486,379**	**11.62**	**43,482**
April	**39,735**	**10,096,487**	**11.34**	**1,096**	**285,903**	**11.64**	**38,639**
May	**29,278**	**7,171,025**	**10.98**	**793**	**202,402**	**11.39**	**28,485**
June	**31,240**	**7,523,598**	**10.75**	**524**	**153,595**	**13.10**	**30,716**

* Revised.

United States Imports of Guayule, Balata, Jelutong, Liquid Latex

(All Quantities in Long Tons)

	Guayule: Tons	Guayule: Dollars	Balata: Tons	Balata: Dollars	Jelutong: Tons	Jelutong: Dollars	Liquid Latex (1): Tons	Liquid Latex (1): Dollars
1924	**1,356**	**536,392**	**464**	**568,456**	**6,165**	**1,237,100**	**2,157**	**864,059**
1925	**3,781**	**1,803,448**	**517**	**574,750**	**6,749**	**1,642,531**	**3,853**	**3,537,810**
1926	**4,305**	**2,562,096**	**354**	**327,213**	**7,263**	**3,127,757**	**3,388**	**4,680,386**
1927	**5,018**	**2,674,957**	**582**	**447,246**	**7,785**	**2,448,657**	**1,116**	**876,077**
1928	**3,075**	**1,755,685**	**731**	**430,855**	**7,552**	**2,540,059**	**4,167**	**2,185,579**
1929	**1,231**	**545,175**	**728**	**566,964**	**8,203**	**2,458,136**	**3,728**	**1,787,997**
1930	**1,096**	**347,388**	**501**	**422,684**	**5,907**	**1,403,244**	**4,449**	**1,506,804**
1931	—	—	**1,208**	**411,692**	**5,777**	**1,019,010**	**4,650**	**884,355**
1932	—	—	**708**	**147,403**	**4,607**	**616,596**	**5,085**	**601,999**
1933	—	—	**1,658**	**2,261,869**	**5,989**	**944,895**	**11,085**	**1,833,671**
1934	402	75,349	1,054	438,209	4,988	943,752	13,070	3,633,253
1934:								
July	—	—	160	63,963	482	87,412	1,231	385,733
August	100	18,607	100	36,732	516	85,651	1,169	369,335
Sept.	—	—	48	14,415	259	47,542	936	312,967
Oct.	—	—	14	2,797	278	48,287	922	282,503
Nov.	—	—	60	20,169	332	60,904	887	296,447
Dec.	—	—	6	2,458	192	31,947	581	184,588
1935:								
Jan.	—	—	81	34,687	448	80,097	848	287,583
Feb.	—	—	62	20,981	222	33,850	573	179,583
March	—	—	57	15,917	488	80,643	1,290	354,654
April	—	—	51	11,452	419	58,429	1,721	415,100
May	51	9,464	62	12,931	332	51,805	1,427	380,844
June	105	19,502	75	23,809	330	50,165	591	152,665

(1) Weight given in pounds of dry rubber contained in latex.

U. S. Consumption of Crude Rubber

(Rubber Manufacturers' Association statistics raised to 100 per cent—All figures in long tons)

(All Quantities in Long Tons)

Figures on Monthly Basis

	1928	1929	1930	1931	1932	1933	1934	1935
Jan.	34,403	43,002	35,194	28,557	29,648	22,645*	39,284*	47,103
Feb.	33,702	41,594	33,302	28,797	31,821	21,392*	40,609	43,187
Mar.	35,688	44,730	35,540	32,788	29,505	17,483*	47,097	42,620
Apr.	32,772	47,521	39,686	33,321	27,518	25,928	44,853*	44,714
May	37,333	49,233	39,386	37,817	30,957	44,074	42,918*	41,568
June	37,676	43,227	34,195	37,916	41,475	50,743*	40,147*	36,623
July	37,407	41,526	29,508	31,397	29,976	49,614*	32,647	
Aug.	42,927	38,274	30,850	27,586	23,721	44,428*	33,310	
Sept.	39,882	34,707	25,515	23,638	23,847	35,281*	30,352	
Oct.	40,857	34,800	27,516	22,277	22,286	31,543*	31,347	
Nov.	37,461	27,659	23,691	22,943	23,231	28,831*	34,842	
Dec.	31,232	25,531	21,687	21,409	18,015	28,757*	36,662	
Tot.	441,340	469,804	375,980	348,986	332,000	400,719*	454,350*	

* Revised.

Reclaimed Rubber in the United States

(All Quantities in Long Tons)

Year	Production	Consumption	% to Crude	Stocks*	Year	Production	Consumption	% to Crude	Stocks*
1925	132,930	137,105	35.6	13,203	1930	157,967	153,497	40.8	22,000
1926	180,582	164,500	45.9	23,213	1931	133,351	124,126	33.9	19,257
1927	189,144	178,471	47.6	24,980	1932	75,608	77,504	23.4	16,354
1928	208,516	223,000	50.4	24,785	1933	99,560	81,602	19.9	20,746
1929	218,954	226,588	48.4	27,464	1934	110,010	100,597	22.3	23,079

Figures on Monthly Basis

	Production	Consumption	% to Crude	Stocks*		Production	Consumption	% to Crude	Stocks*
1934:									
Jan.	9,828	7,000	17.8[a]	24,263	July	9,446	8,175	25.0	24,926
Feb.	9,504	7,646	18.8	23,356	Aug.	8,160	8,493	25.5	24,607
Mar.	11,479	9,683	20.6	25,113	Sept.	6,974	7,028	23.2	24,540
Apr.	10,185	9,387	20.9	22,033	Oct.	8,145	8,167	26.1	24,511
May	10,848	9,500	22.1	22,887	Nov.	7,268	7,775	22.3	23,999
June	10,820	9,459	23.5	23,664	Dec.	7,353	8,284	22.6	23,079
1935:									
Jan.	10,465	11,261	23.9	22,291	July	.....	.....	...	.....
Feb.	10,072	9,374	23.3	22,989	Aug.	.....	.....	...	.....
Mar.	10,549	9,741	22.9	20,637	Sept.	.....	.....	...	.....
Apr.	10,315	10,466	23.4	18,716[a]	Oct.	.....	.....	...	.....
May	10,223	9,938	23.9	18,541	Nov.	.....	.....	...	.....
June	8,590	8,710	23.8	17,932	Dec.	.....	.....	...	.....

* Stocks on hand at the end of month or year.
[a] Revised.

U. S. Consumption of Gasoline

(Bureau of Mines Statistics)

(In Thousands of Barrels of 42 Gallons)

	1933*	1934	1935		1932	1933*	1934
January	26,397	29,416	28,062	**August**	**35,706**	**37,400**	**38,933**
February	23,320	25,048	26,432	September	33,828	34,580	34,877
March	28,123	30,528	31,997	October	32,680	33,022	37,544
April	29,791	32,735	36,076	November	29,895	30,312	34,839
May	33,709	38,141	39,089	December	27,110	28,572	30,486
June	37,699	36,296	37,884				
July	34,087	37,393		Total	373,900	377,003*	406,267

* Revised on basis of final 1933 figures issued September 26, 1934 by Bureau of Mines.

Rims Inspected and Passed in U. S.

(Tire and Rim Association Reports)

	Total		Total		Total
1924	21,863,311	1928	24,247,282	1932	6,261,336
1925	26,001,664	1929	24,141,502	1933	8,713,962
1926	24,199,524	1930	17,364,096	1934	12,255,118
1927	19,700,003	1931	11,253,800	1935	.....

1935:		1935:		1934:	
January ...	1,868,723	May	1,561,434	September .	526,472
February ..	1,616,398	June	1,428,314	October ...	629,878
March	1,724,077	July	1,339,353	November .	577,713
April	1,907,032	August		December ..	1,199,240

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Ave.
1933																																
April	2⅞	—	2⅞	3	2⅜	3⅛	3⅛	3⅛	—	3⅜	3⅜	3⅜	3⅜	—	—	—	3⅜	3⅜	4⅛	4	3⅞	3⅜	4⅛	4⅛	4⅛	4⅛	4⅛	4⅛	4⅛	—	—	3⅝
May	4⅜	—	4⅞	—	4⅛	4⅛	4⅛	4⅛	4⅝	4⅛	5	5⅛	5⅛	—	4⅝	4⅝	4⅛	4⅛	4⅛	4⅛	—	4⅛	—	5⅛	5⅛	5⅛	5⅛	5⅛	5⅛	—	—	5⅛
June	6⅛	—	6⅛	—	6⅛	6⅛	6⅛	6½	6⅜	6½	7⅛	6⅝	6⅝	5⅛	5⅛	5⅛	5⅛	5⅛	5⅛	5⅛	6⅛	6⅛	6⅛	6⅛	6⅛	6⅛	6⅛	6⅛	6⅛	6⅛	—	6⅛
July	6⅝	—	6⅝	—	6⅝	7⅛	7⅛	7⅛	7⅛	7⅛	7⅝	7⅝	8½	8⅝	8⅝	8⅝	9⅛	9⅛	8⅝	8⅝	7⅞	7⅞	7⅞	7⅞	7⅞	7⅞	7⅞	7⅞	7⅞	7⅞	7⅞	7⅞
August	7⅛	—	7⅛	—	7⅛	7⅛	7⅛	6¾	7⅛	7⅛	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝	7⅝
September	7⅛	—	8	—	7⅞	7	7	6¾	6⅞	7⅛	7	6⅞	6⅞	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛	7⅛
October	7⅛	—	7⅛	—	8	7⅛	8	8	7⅛	7⅛	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
November	7⅛	—	8	—	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛
December	9¼	—	—	9¼	9⅛	8⅛	9⅛	8⅛	8⅛	—	—	8⅛	—	8⅛	8⅛	—	—	8⅛	8¼	8¼	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	—	8⅛
1934																																
January	—	9	8⅛	9	9	9	—	—	8¾	8⅝	8⅝	8⅝	8⅝	10⅞	9⅞	9⅞	8¾	9⅛	9⅞	9¾	10½	9½	10½	9⅛	10⅛	10½	10⅝	10⅝	10	10	9⅛
February	—	9⅞	9⅛	—	10⅛	10¾	10¾	10¾	10¾	10½	—	—	10½	11⅛	10⅞	11⅛	10¼	—	10½	10¾	10⅝	—	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝	10⅝	—	—	10⅛
March	—	10⅛	10½	—	10⅞	10¾	10¾	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	—	10⅞	11⅛	11⅛	10⅝	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	—	11
April	—	10⅞	11⅜	11⅝	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	11⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛	12⅛
May	—	14⅛	14⅛	15	15⅛	15⅛	15⅛	15⅛	14	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝
June	—	14⅝	14⅝	15	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝	14⅝
July	—	13	13⅝	—	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝	13⅝
August	—	14⅛	14⅛	15	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛
September	—	14⅛	14⅛	15	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛
October	—	14½	13⅞	—	13	13⅜	13⅜	13⅜	13⅜	13⅜	14⅜	14⅜	13⅜	13⅜	13⅜	13⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜	14⅜
November	—	13⅝	13⅝	—	13	13⅜	13⅜	13⅜	13¼	13¼	12⅞	12⅞	13¼	12⅞	13⅜	13⅜	12⅞	13	13	13	12½	12½	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	13⅛	13	13
December	—	13⅛	12⅞	—	13	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜	13⅜
1935																																
January	—	13¼	13½	—	13½	13½	—	—	13⅜	13⅜	13⅜	13⅜	—	13¼	12⅞	13⅛	13⅛	13⅛	13	13	13⅛	12⅛	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	13⅛
February	—	12¾	12¾	—	12¾	12⅝	12⅝	12⅝	13⅛	13⅛	13⅛	13¼	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛	13⅛
March	—	12⅝	12⅝	—	12¾	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝
April	—	11⅜	11⅜	—	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜
May	—	11⅜	11½	—	11½	11½	11½	11½	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜	11⅜
June	—	12⅛	12⅛	—	12½	12½	12½	12½	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜	12⅜
July	—	12⅜	12⅜	—	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝
August	—	12⅛	12¾	—	12¾	12⅝	12⅝	11⅞	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝	12⅝

Average Spot Closing Prices—Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1929

Year	Cents	Year	Cents	Year	Cents	Year	Cents	Year	Cents
1910	206.60	1914	65.33	1918	60.15	1922	17.50	1926	48.50
1911	141.30	1915	65.85	1919	48.70	1923	29.45	1927	37.72
1912	121.60	1916	72.50	1920	36.30	1924	26.20	1928	22.48
1913	82.04	1917	72.23	1921	16.36	1925	72.46	1929	20.55

Average Monthly Price per Pound Since 1928

	1929 Cents	1930 Cents	1931 Cents	1932 Cents	1933 Cents	1934 Cents	1935 Cents
Jan.	20.14	15.24	8.34	4.38	3.08	9.32	13.10
Feb.	23.7	15.85	7.70	4.03	2.95	10.45	12.92
Mar.	24.55	15.34	7.71	3.35	3.01	11.01	11.51
Apr.	21.18	14.93	6.43	3.02	3.56	12.10	11.55
May	21.46	14.24	6.49	3.09	4.95	13.26	12.05
June	20.64	12.45	6.35	2.66	6.15	13.51	12.57
July	21.30	11.24	6.37	2.89	8.01	14.60	12.10
Aug.	20.59	9.96	5.38	3.63	7.31	15.47	
Sept.	20.37	8.28	5.08	3.84	7.30	15.36	
Oct.	19.67	8.20	4.87	3.65	7.64	13.96	
Nov.	16.62	9.01	4.65	3.44	8.66	13.04	
Dec.	16.12	9.05	4.64	3.24	8.87	12.98	
Average for Year	20.55	11.98	6.17	3.49	5.96	12.92	

London Closing Prices of Ribbed Smoked Sheets

(In Pence Per Pound)

Day	May	June	July	Aug.	Day	May	June	July	Aug.
1	5⅝	5⅛	5⅛	5⅛	17	6	6⅛	5⅛	
2	5⅝	—	5⅛	5¾	18	5⅞	6⅛	5¾	
3	5½	5⅛	5⅞	—	19	—	6⅛	5⅛	
4	—	6	5⅛	—	20	5⅞	6	—	
5	—	6	5⅛	—	21	5⅞	6	—	
6	—	6	—	5⅛	22	6	—	5¾	
7	5⅝	6	—	5¾	23	6	—	5¾	
8	5⅝	—	5⅛	5⅛	24	6	6	5⅝	
9	5⅝	—	5⅛		25	6⅛	6	5¾	
10	5⅝	—	5⅞		26	—	5⅛	5⅝	
11	5⅛	6⅛	5⅞		27	6⅛	5⅛	—	
12	—	6⅛	5⅛		28	6	6	—	
13	5¾	6⅛	—		29	5⅛	—	5⅛	
14	5⅛	6⅛	—		30	5⅛	—	5¾	
15	5⅛	6⅛	5⅞		31	5⅛	—	5⅛	
16	5⅛	—	5¾						

Average Monthly Price Per Pound

Month	1932 Pence	1933 Pence	1934 Pence	1935 Pence	Month	1932 Pence	1933 Pence	1934 Pence	1935 Pence
Jan.	3.052	2.264	4.429	6.434	Aug.	2.654	3.811	7.401	
Feb.	2.760	2.093	4.920	6.292	Sept.	2.485	3.728	7.409	
Mar.	2.047	2.099	5.136	5.745	Oct.	2.425	3.957	6.806	
Apr.	1.876	2.323	5.712	5.604	Nov.	2.518	4.096	6.294	
May	1.825	2.966	6.207	5.822	Dec.	2.444	4.200	6.295	
June	1.750	3.392	6.245	6.027	Average for Year	2.434	3.233	6.159	
July	1.875	3.860	7.053	5.801					

Spot Closing Cotton Prices

(Middling Upland Grade—New York Market)

Recent Daily Price Per Pound

Date	June	July	Aug.	Date	June	July	Aug.	Date	June	July	Aug.
1	11.55	12.15	12.00	11	11.90	12.35		21	11.85	—	
2	—	12.35	11.95	12	11.80	12.45		22	11.95	12.25	
3	11.50	12.45	11.90	13	11.80	12.35		23	—	12.10	
4	11.90	—	—	14	11.95	—		24	11.90	12.25	
5	11.80	12.20	11.90	15	12.00	12.40		25	11.90	12.00	
6	11.90	12.35	11.95	16	—	12.25		26	11.95	12.15	
7	11.80	—	11.85	17	11.95	12.35		27	12.00	12.15	
8	12.05	12.30	11.65	18	11.85	12.35		28	12.20	—	
9	—	12.40		19	11.85	12.30		29	12.15	12.05	
10	11.95	12.45		20	11.90	12.20		30	—	12.00	
								31	—	12.10	

Average Monthly Price Per Pound

	1932 Cents	1933 Cents	1934 Cents	1935 Cents		1932 Cents	1933 Cents	1934 Cents	1935 Cents
Jan.	6.65	6.23	11.25	12.70	Aug.	7.43	9.55	13.40	
Feb.	6.85	6.05	12.28	12.58	Sept.	6.30	9.64	13.00	
Mar.	6.86	6.39	12.30	11.63	Oct.	6.30	9.58	12.48	
Apr.	6.16	7.02	11.80	11.73	Nov.	6.22	10.04	12.53	
May	5.72	8.64	11.44	12.25	Dec.	6.00	10.17	12.76	
June	5.02	9.47	12.20	11.89	Average for Year	6.41	8.63	12.36	
July	5.87	10.76	12.84	12.26					

World Stocks of Crude Rubber

ON HAND OR AFLOAT TO THE U. S.

At End of	ON HAND 1933	ON HAND 1934	ON HAND 1935	AFLOAT 1933	AFLOAT 1934	AFLOAT 1935	ON HAND AND AFLOAT 1933	ON HAND AND AFLOAT 1934	ON HAND AND AFLOAT 1935
Jan.	396,376	368,660	346,084	32,539	45,768	42,066	428,915	414,428	388,150
Feb.	381,794	358,681	*339,335*	32,898	53,063	42,969	414,692	411,744	*382,304*
Mar.	390,135	352,897	*338,700	29,531	54,722	44,485	419,666	407,619	*383,185
Apr.	382,167	351,073	*334,954	30,745	56,251	37,651	412,912	407,324	*372,605
May	364,623	350,935	*319,281	43,342	57,921	44,375	407,965	409,250	363,656
June	333,954	358,461	*320,470	63,668	46,698	55,581	397,562	404,847	376,051
July	326,609	364,883		57,435	45,869		384,044	410,752	
Aug.	325,148	362,647		53,084	40,278		378,232	402,925	
Sept.	334,637	359,667		57,255	38,831		391,982	398,498	
Oct.	343,579	362,018		58,568	38,247		402,147	400,265	
Nov.	353,852	361,236		57,140	38,625		410,992	399,861	
Dec.	364,541	352,632		55,606	47,644		419,147	400,276	

(Rubber Manufacturers' Association figures raised to 100%)

* Revised.

STOCKS IN GREAT BRITAIN

Stocks in London

(No. of Tons in Wharves and Warehouses, including Latex)

At end of	1933	1934	1935	At end of	1933	1934	1935
Jan.	36,481	38,570	81,807	July	41,178	50,490	
Feb.	37,182	38,752	87,605	Aug.	39,480	48,953	
Mar.	40,689	40,501	92,664	Sept.	39,237	56,103	
Apr.	40,911	42,413	94,361	Oct.	37,101	63,079	
May	41,998	42,190	95,722	Nov.	36,139	67,656	
June	43,032	45,674	98,077	Dec.	35,615	72,285	

At End of Recent Weeks

	First Saturday	Second Saturday	Third Saturday	Fourth Saturday	Fifth Saturday
1935					
Mar.	88,097	89,388	91,153	91,298	92,602
Apr.	93,209	94,130	94,361	94,543	
May	95,138	95,454	96,097	96,962	
June	96,067	96,463	96,749	97,385	97,112
July	98,302	98,784	97,934	98,342	

Stocks in Liverpool

1935					
Mar.	68,266	68,963	69,440	69,616	69,332
Apr.	70,151	70,057	70,886	70,729	
May	71,488	71,278	71,673	72,027	
June	71,839	72,605	73,338	73,569	73,257
July	74,211	74,527	74,250	74,766	

STOCKS IN PENANG AND SINGAPORE

(Stocks held by Dealers—Quantities in Long Tons)

End of	1932	1933	1934	1935	End of	1932	1933	1934	1935
Jan.	48,850	22,525	40,405	50,588	July	17,017	36,972	65,099	
Feb.	46,954	21,530	41,884	51,628	Aug.	20,649	38,601	59,227	
Mar.	46,591	24,594	47,933	46,046	Sep.	20,415	36,948	54,905	
Apr.	39,663	25,460	48,431	43,295	Oct.	23,158	37,282	54,155	
May	38,690	29,822	76,393	45,625	Nov.	25,419	39,018	49,282	
June	19,770	34,676	73,218	43,866	Dec.	25,341	38,269	51,255	

STOCKS IN OTHER CENTRES

	Malaya Mainland	Holland	Colombo	Para and Manaos
End of: 1934				
Oct.	31,762	1,401	5,675	3,113
Nov.	33,590	1,404	5,631	3,081
Dec.	23,173	1,326	5,732	3,293
Jan., 1935	33,609	1,397	5,926	3,477
Feb.	32,062	1,534	4,753	3,153
Mar.	31,844	1,551	3,917	3,214
Apr.	33,583	1,536	4,245	3,019
May	31,896	1,489	4,910	2,643
June	33,823			

RUBBER STOCKS AFLOAT

	Afloat for United States	Afloat for Europe	All Other * Afloat	Total * Afloat
End of: 1934				
March	54,722	33,365	32,205	120,292
April	56,251	32,640	24,866	113,757
May	57,921	39,370	43,854	141,145
June	46,698	36,870	26,910	110,478
July	45,869	35,430	15,355	96,654
August	40,278	36,060	21,001	97,349
September	38,831	39,630	35,215	113,716
October	38,247	40,560	20,061	98,868
November	38,625	39,870	21,342	99,837
December	47,644	41,200	36,132	124,976
End of: 1935				
January	42,066	35,600	35,334	113,000
February	42,969	28,750	31,281	103,000
March	44,485	30,400	17,115	92,000
April	37,651	31,400	28,349	97,400
May	44,375	30,000	28,825	103,200
June	55,581	28,000P	15,619	99,200

* *Total Afloat* is an arbitrary estimate based on 1½ months' shipments as adopted by the Department of Commerce. *All Other Afloat* is determined by subtracting the amount of stocks in transit to the United States and Europe from the estimated total.

P—Preliminary estimate.

U. S. Tire and Tube Statistics[1]

(All Figures Represent Thousands)

AUTOMOBILE CASINGS

Figures for Recent Years

	1927	1928	1929	1930	1931	1932	1933	1934
Production	64,439	77,944	68,726	50,965	48,739	40,085	45,304	47,233
Shipments	64,059	74,296	69,395	53,638	48,151	40,260	44,094	46,687
Inventory[2]	10,264	13,624	11,838	9,003	7,775	7,644	8,888	9,455

Figures for Recent Months

	PRODUCTION 1933	PRODUCTION 1934	PRODUCTION 1935	SHIPMENTS 1933	SHIPMENTS 1934	SHIPMENTS 1935	INVENTORY 1933	INVENTORY 1934	INVENTORY 1935
Jan.	2,258	3,922	4,626	2,597	3,222	3,663	7,237	9,684	10,398
Feb.	2,339	4,335	4,383	2,292	3,285	3,287	7,377	10,725	11,530
Mar.	2,038	5,180	4,346	2,092	4,223	4,204	7,290	11,651	11,675
Apr.	3,123	4,470	4,512	3,654	4,438	5,144	6,778	11,981	11,003
May	5,189	4,456	4,175	5,180	5,332	4,067	6,760	11,127	11,131
June	6,100	4,342		6,305	5,228		6,615	10,219	
July	5,714	3,353		5,497	4,157		6,844	9,437	
Aug.	4,994	3,533		4,707	4,308		7,070	8,697	
Sept.	3,999	2,936		3,503	3,183		7,595	8,419	
Oct.	3,249	3,287		2,537	3,010		8,462	8,657	
Nov.	3,039	3,341		2,197	3,191		9,247	8,779	
Dec.	3,082	3,778		3,531	3,109		8,888	9,455	

AUTOMOBILE INNER TUBES

Figures for Recent Years

	1927	1928	1929	1930	1931	1932	1933	1934
Production	70,823	80,180	68,829	52,420	48,333	36,891	42,546	46,228
Shipments	72,896	77,127	70,592	54,938	50,021	37,911	41,391	45,046
Inventory[2]	13,692	16,117	12,807	9,999	7,922	6,749	7,815	9,180

Figures for Recent Months

	PRODUCTION 1933	PRODUCTION 1934	PRODUCTION 1935	SHIPMENTS 1933	SHIPMENTS 1934	SHIPMENTS 1935	INVENTORY 1933	INVENTORY 1934	INVENTORY 1935
Jan.	2,093	3,530	4,259	2,535	3,199	3,722	6,197	8,403	9,621
Feb.	2,224	4,077	4,171	2,102	3,323	3,362	6,357	8,445	10,466
Mar.	1,883	5,194	4,123	1,902	4,118	4,168	6,369	10,244	10,406
Apr.	2,853	4,735	4,259	3,051	4,342	4,453	6,189	10,585	10,170
May	5,189	4,359	3,892	5,180	4,902	3,451	6,760	10,043	10,615
June	5,448	4,097		5,778	5,309		6,097	8,795	
July	5,603	3,531		5,211	4,323		6,440	8,053	
Aug.	4,916	3,680		4,687	4,198		6,628	7,555	
Sept.	3,827	3,110		3,472	3,024		7,008	7,639	
Oct.	3,506	3,219		2,676	2,689		7,831	8,151	
Nov.	2,863	3,169		2,103	2,767		8,625	8,503	
Dec.	2,631	3,503		3,410	2,850		7,815	9,180	

(1) Rubber Manufacturers' Association figures, raised to 100%. The Association estimates its figures to be 75% complete up until 1929 and 80% complete for 1929-1933. Beginning 1934, the Association reported its figures to be 97% complete.

(2) Held by manufacturers at end of period indicated.

Automobile Production

	United States Total	United States Passenger Cars	United States Trucks	Canada Total	Canada Passenger Cars	Canada Trucks	Grand Total
1928	4,357,384	3,826,613	530,771	242,382	196,737	45,645	4,599,944
1929	5,358,420	4,587,400	771,020	263,295	207,498	55,797	5,621,715
1930	3,355,986	2,814,452	540,534	154,192	125,442	28,750	3,510,178
1931	2,389,730	1,973,090	416,640	82,621	63,477	19,144	2,472,351
1932	1,370,678	1,135,493	235,187	60,816	50,718	10,098	1,431,494
1933*	1,920,057	1,573,512	346,545	65,924	53,855	12,069	1,992,126
1934	2,778,739	2,190,099	588,640	116,890	92,538	24,352	2,895,629
1934							
June*	308,065	261,852	46,213	13,905	10,810	3,095	321,970
July*	266,576	223,868	42,708	11,114	8,407	2,707	277,690
August*	234,810	183,500	51,310	9,904	7,325	2,579	244,714
Sept.*	168,871	123,909	44,962	5,579	4,211	1,368	174,450
Oct.*	132,491	84,503	47,988	3,780	2,125	1,655	136,271
Nov.*	78,465	45,556	32,909	1,697	1,052	645	80,162
Dec.	183,187	128,059	55,128	2,732	2,334	398	185,919
1935							
Jan.*	292,817	229,233	63,584	10,607	8,269	2,338	303,424
Feb.*	335,699	275,623	60,076	18,114	13,885	4,229	353,813
March*	429,834	361,816	68,018	21,975	18,179	3,796	451,809
April*	477,746	401,628	76,118	24,121	20,686	3,435	501,867
May*	364,727	307,522	57,205	20,765	17,093	3,672	385,492
June	361,320	296,609	64,711	15,745	12,276	3,469	377,065

* Revised.

Exports of Crude Rubber from Principal Producing Countries

(Long Tons)

	BRITISH MALAYA [1]								DUTCH EAST INDIES [2]						
	Gross Exports	Imports	Gross Exports Minus Imports	Ceylon [2]	India & Burma [3]	Sarawak [4]	British North Borneo [3]	Siam [4]	Java & Madura	Sumatra E. Coast	Other D.E.I.	Indo-China [3]	Amazon Valley	All Other [6]	World Total [7]
1923	252,816	70,432	181,584	39,971	6,416	5,705	4,237	1,718	32,930	46,344	57,822	5,067	16,765	7,856	406,415
1924	259,706	108,524	151,182	39,997	7,657	6,699	4,621	2,962	42,446	54,497	80,347	6,688	23,165	9,065	429,366
1925	316,825	158,022	158,803	49,566	10,082	5,424	5,377	5,377	46,757	65,499	120,626	7,881	25,298	13,797	514,487
1926	391,328	151,243	240,085	58,962	9,874	9,155	6,079	4,027	52,186	71,413	121,231	8,203	24,298	16,017	621,530
1927	371,322	182,845	188,477	55,356	11,321	10,923	6,582	5,472	55,297	77,815	142,171	8,645	28,782	15,633	606,474
1928	409,430	149,787	259,643	57,267	10,790	10,087	6,698	4,813	58,848	82,511	121,770	9,548	21,129	10,690	653,794
1929	574,836	163,092	411,744	81,584	11,663	11,077	7,381	5,018	65,990	87,789	134,037	9,696	21,148	6,767	853,894
1930	547,043	133,876	413,167	76,970	10,782	10,309	6,781	4,251	69,755	79,396	115,254	7,665	14,260	5,651	814,241
1931	519,740	125,506	394,234	61,769	8,470	10,451	6,247	4,218	75,952	87,747	116,009	11,696	12,121	3,294	792,203
1932	478,252	92,539	385,713	48,973	3,888	6,960	4,664	3,451	61,312	79,837	85,871	13,883	6,450	1,816	702,818
1933	573,412	167,377	406,035	63,351	4,527	10,874	7,555	7,765	73,851	91,861	149,659	18,394	9,883	2,737	846,312
1933:															
May	42,917	13,664	29,253	4,643	475	1,091	583	359	6,782	7,298	13,195	1,371	918	143	66,111
June	41,482	16,538	24,944	5,198	377	1,149	582	632	7,352	6,654	14,779	1,369	704	124	63,864
July	50,531	18,772	31,759	4,201	270	1,358	728	797	7,367	8,580	16,534	1,310	913	166	73,983
Aug.	52,436	17,869	34,567	5,839	246	955	728	926	6,460	7,985	15,161	808	1,116	323	75,114
Sept.	49,607	15,146	34,461	5,111	125	1,027	727	611	5,868	9,164	15,005	1,702	656	274	74,731
Oct.	61,002	17,390	43,612	5,674	271	959	750	979	6,329	8,682	15,170	1,426	965	314	85,131
Nov.	54,599	20,142	34,457	6,097	516	1,020	750	1,303	6,684	9,951	14,474	1,553	956	366	78,127
Dec.	57,579	18,110	39,469	7,435	964	989	750	1,046	7,030	10,183	17,274	3,779	930	302	90,151
1934:															
Jan.	55,055	16,128	38,927	6,929	1,531	1,197	805	1,290	6,513	7,975	13,913	1,109	576	127	80,892
Feb.	57,867	15,027	42,840	8,620	775	1,005	805	1,264	6,706	9,211	13,696	1,232	831	105	87,090
March	58,515	19,907	38,608	6,750	1,412	1,360	806	1,363	8,655	10,539	19,084	1,968	846	113	91,504
April	56,748	20,957	35,791	5,157	762	1,447	894	1,311	7,282	9,808	19,250	1,330	440	236	83,708
May	69,403	25,691	43,712	8,870	1,106	1,892	1,397	997	12,104	14,606	26,598	1,243	726	328	113,579
June	53,282	20,981	32,301	5,397	1,425	1,886	644	1,497	4,860	6,192	15,956	1,593	765	377	72,893
July	53,335	22,829	30,506	3,818	710	1,662	1,048	2,399	5,762	7,369	14,415	1,703	353	252	69,997
Aug.	52,641	17,865	34,776	4,948	552	1,714	1,048	1,908	5,340	8,901	11,356	1,610	710	251	73,114
Sept.	61,051	17,889	43,162	6,555	294	1,438	839	1,626	5,722	10,738	14,688	1,665	764	222	87,713
Oct.	47,045	10,226	36,819	6,544	413	1,412	1,196	1,328	5,970	6,643	5,556	1,413	840	401	68,535
Nov.	51,140	8,759	42,381	6,756	501	953	941	1,356	7,621	7,123	5,338	2,356	1,017	334	76,676
Dec.	59,575	15,375	44,200	8,481	990	1,237	680	2,043	10,865	12,953	12,354	2,956	1,035	239	98,033
1935															
Jan.	56,720	17,142	39,578	5,202	2,269	1,630	1,222	2,614	3,812	5,371	8,704	2,650	1,196	460	74,719
Feb.	50,593	17,676	32,917	5,556	731	1,887	760	2,288	4,395	7,663	15,194	2,076	636	254	74,154
Mar.	47,407	13,437	33,970	3,181	701	1,901	773	2,076	5,592	7,950	7,973	1,472	740	526	66,855
Apr.	53,360	16,029	37,331	2,976	370	1,895	846	1,661	5,574	6,873	12,683	2,827	963	300*	75,072
May	51,353	23,720	27,633	4,223	674	2,323	848	2,752	6,217	7,931	21,058	2,138	832	300*	76,905
June	49,751	18,637	31,114	3,525	1,077	2,031		2,869	5,698	8,258	14,168	2,021			
July	48,975	11,257	37,718	4,106		1,870		1,939				2,015			

(1) Malayan net exports cannot be taken as production, since imported rubber is largely wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 115 tons in 1923, 1,117 in 1924, 3,618 in 1925, 3,263 in 1926, 2,439 in 1927, 1,437 in 1928, 2,670 in 1929, and 1,274 in 1930. (2) Ceylon Chamber of Commerce statistics until 1926; rubber exported as latex is not included—such shipments were equivalent to 18 tons in 1923, 93 tons in 1924, 6 tons in 1925, 20 tons in 1926, about ½ ton in 1927, and 1 ton in 1928, and practically none in 1929, 1930 and 1931. (3) Official statistics. (4) Imports into Singapore and Penang. (5) Exports from "Other D.E.I." are chiefly wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 2,342 tons in 1923, 1,008 tons in 1924, 2,239 tons in 1925, 44 tons in 1926, 84 tons in 1927, 1,459 tons in 1928, 1,302 tons in 1929, and 2,656 tons in 1930. (6) Calculated from official import statistics of principal consuming countries, viz., United States, United Kingdom, France, Germany, Belgium and Netherlands, and includes guayule rubber. (7) This total includes the third column for British Malaya, "Gross Exports minus Imports," and all the figures shown for the other territories. * Figure is provisional: final figure will be shown when available.

NOTE: THE FIGURES FOR 1933 ARE REVISED AS OF JANUARY 25, 1935 AND REPRESENT FINAL FIGURES

Net Imports of Crude Rubber into Principal Manufacturing Countries

(Long Tons)

	United States [1]	United Kingdom	France (h)	Germany	Canada (ac)	Japan (da)	Italy	Russia (ce)	Australia (cd)	Belgium (d)	Netherlands	Scandinavia (abcdf)	Spain (g)	Czechoslovakia (abcd)	World Total
1919	238,407	42,671	17,685	5,584	6,395	9,753	9,894	75	1,002	3,995	2,771	3,149	2,418	9	343,808
1920	249,530	56,844	13,885	11,890	11,746	5,297	6,123	62	1,815	3,840	5,510	2,292	2,008	567	371,409
1921	179,736	42,087	15,135	21,920	8,124	21,713	3,906	165	1,014	1,705	1,022	1,279	2,245	569	300,620
1922	296,594	11,724	24,352	27,546	9,207	15,934	6,430	2,493	2,643	172	—3,807	1,778	589	567	396,222
1923	301,527	12,700	27,392	18,519	13,277	15,372	8,489	2,986	1,649	2,184	792	2,528	630	1,128	409,173
1924	319,103	—11,550	30,446	22,727	14,299	19,571	8,764	2,346	3,124	2,688	—807	3,178	944	1,370	416,203
1925	385,596	4,061	32,956	33,937	19,683	11,117	11,412	7,088	4,757	2,930	875	3,149	1,155	1,558	520,274
1926	399,981	84,865	34,240	22,775	20,229	18,125	9,809	6,529	9,021	2,498	2,670	4,046	1,299	1,870	617,957
1927	403,472	60,249	34,271	38,892	26,405	20,521	11,381	12,018	9,490	6,482	636	4,224	2,055	2,672	632,768
1928	407,572	4,846	36,496	37,855	30,447	25,621	12,433	15,134	8,430	7,958	2,243	4,418	3,178	3,138	599,771
1929	528,608	122,675	55,093	49,275	35,453	34,284	17,169	11,774	15,886	9,445	3,022	6,440	864	4,650	894,638
1930	458,036	120,069	68,503	45,488	28,793	33,039	18,639	16,387	5,354	10,635	2,924	7,710	2,400	4,468	822,445
1931	475,993	86,170	46,466	39,688	25,261	43,483	10,149	30,671	7,649	11,009	2,220	6,360	2,605	7,717	794,641
1932	393,844	44,086	42,506	45,121	20,917	56,027	14,469	30,637	12,576	9,519	2,851	7,262	4,359	9,444	693,618
1933	398,365	73,335	61,953	54,120	19,332	66,831	19,341	29,830	13,534	11,166	1,245	7,831	5,520	10,402	.....
1933:															
Oct.	43,366	3,373	4,921	4,772	2,580	6,150	1,836	2,084	604	1,118	310	777	441	686	73,081
Nov.	39,633	3,955	5,419	4,086	2,184	6,296	942	4,483	301	1,129	222	878	493	882	70,903
Dec.	38,864	6,524	5,415	4,933	1,773	6,865	1,029	2,400	190	1,360	213	703	776	1,772	72,817
1934:															
Jan.	47,114	9,503	6,472	6,057	1,721	5,628	2,517	2,749	566	2,173	381	1,185	484	1,355	88,276
Feb.	33,087	10,785	5,301	5,490	1,854	4,570	2,388	3,399	950	1,538	287	464	656	516	73,357
Mar.	39,306	14,008	4,980	6,453	3,411	5,655	1,394	4,018	671	965	284	836	394	976	86,242
Apr.	42,262	9,999	3,210	6,701	2,419	5,679	1,966	1,326	415	504	262	1,217	752	465	77,177
May	47,412	9,786	3,634	6,499	2,218	6,905	2,218	4,360	769	214	322	940	142	1,768	87,192
June	46,785	16,564	3,803	6,171	2,208	6,745	1,887	3,145	1,512	837	331	843	1,146	1,624	93,601
July	40,308	12,266	4,051	5,494	2,430	5,739	708	1,640	732	810	540	1,602	747	1,094	78,161
Aug.	31,405	13,728	3,660	3,078	1,948	4,945	1,795	6,829	658	669	239	1,033	277	1,495	71,759
Sept.	30,345	11,254	4,244	2,607	2,770	7,346	1,486	4,487	743	501	339	980	465	477	68,044
Oct.	27,323	18,897	3,424	2,148	3,043	7,227	1,296	3,681	798	693	447	813	675	234	70,719
Nov.	35,982	15,875	3,176	3,425	1,568	5,580	1,764	4,488	516	379	187	1,382	542	215	75,079
Dec.	17,305	15,816	3,605	5,207	2,849	3,904	1,979	6,460	1,312	—168	139	1,143	615	762	60,928
1935															
Jan.	39,546	20,383	5,573	4,286	2,670	4,400	1,613	3,446	1,099	419	158	1,252	468	1,245	86,558
Feb.	45,999	15,609	4,593	3,513	1,558	5,582	4,356	1,810	848	399	477	838	567	1,836	87,985
Mar.	44,772	12,810	4,017	6,353	2,710	4,421	1,582	4,624	1,459	240	331	891	630	741	85,581
Apr.	40,061	11,574	3,306	5,820	1,063	6,635	1,653	3,387	1,150	520	329	1,049	432	789	78,115
May	29,962	12,498	3,828	6,049	3,929	5,429	935	1,937	671	982	272	853		774	
June	31,410	10,253	3,210	4,551					496						

a—Including gutta percha. b—Including balata. c—Re-exports not deducted in monthly statistics. d—Including some scrap and reclaimed rubber. e—Official statistics of rubber imports by Soviet Russia. f—Including Norway, Sweden, Denmark and Finland. g—United Kingdom and French exports to Spain except in years prior to 1925. h—French imports have been reduced 12 per cent in order to eliminate imports of gutta percha and to reduce to basis of net weight. [1] United States imports of guayule are included in this compilation. * Figure is provisional; final figure will be shown immediately it becomes available.

A Section Devoted to Listings of Leading Producers and Distributors of Raw Materials, Machinery and Equipment, and Supplies for the Rubber Industry.

The Market Place

Chemicals and Compounding Materials — Machinery and Equipment—Crude, Reclaimed and Scrap Rubber—Fabrics—Rubber Products — Consulting Engineers.

Chemicals and Compounding Materials —

ACCELERATORS—
Ureka C—Ureka Blend B—Ureka.—A-1, A-7, A-11, A-16, A-19, A-32, Z-88, A-510, DPG
ANTIOXIDANTS — Flectol A, Oxynone
The RUBBER SERVICE Laboratories Co.
1012 Second National Bldg., Akron, Ohio
A Division of MONSANTO Chemical Wks.

ALUMINUM FLAKE
A uniform, fine, low gravity, white reinforcing pigment. *Furnished to the rubber trade for 25 years.*
The Aluminum Flake Co.
Akron, Ohio

ANTIMONY Pentasulphide, golden and crimson, very fine, pure.
Rare Metal Products Co.
Belleville, N. J.
Direct Factory Representation

ASBESTINE—Specially prepared for use in Rubber. Send for liberal working samples.
SOLE PRODUCERS
International Pulp Co.
41 Park Row New York City

CADMIUM REDS
In 6 Shades . . Deep Orange to Extra Dark Red
LITHOPONES
Standard and Titanated
United Color and Pigment Co., Inc.
Newark, New Jersey
Branches in Principal Cities

CALCENE—The Ideal low gravity, white reinforcing pigment. Gives high tensile and elongation properties with exceptionally good resistance to tear and abrasion.
The Columbia Alkali Corporation
BARBERTON, OHIO

CARBON BLACK—*Micronex*
the world's standard gas black, universally known as the "King of Rubber Pigments."
Binney & Smith Co.
41 East 42nd St. New York City

IN this section are listed the products of the leading producers of materials and equipment used by rubber manufacturers.

When buyers refer to these pages for their needs, your name and address and a description of your products should be available here. The cost of a one-inch listing is only $5.00 per issue—the lowest cost of advertising space available in the rubber field.

THE RUBBER AGE
250 West 57th St., New York

CABOT CERTIFIED CARBON BLACK
"Spheron"
Godfrey L. Cabot, Inc.
77 Franklin St. Boston, Mass.

CARBON BLACK— *Aerfloted*
Arrow Black for rubber compounding. Standard for grit-free uniformity.
J. M. Huber, Inc.
460 West 34th St. New York

CARBON BLACK
SUPREME—*the up-to-date standard for rubber*
Imperial Oil & Gas Products Co.
Union Bank Bldg., Pittsburgh, Pa.

CARBON BLACK
DIXIE...KOSMOS
Used throughout the world
UNITED CARBON COMPANY
Charleston, W. Va.
New York • Akron • Chicago

CARBON BLACK
DISPERSO . . . *the specially developed Carbon Black that gives* BETTER DISPERSION.
WISHNICK-TUMPEER, INC.
251 Front Street New York

CATALPO—The universal and standard rubber pigment now being used in treads, solids, tubes, carcass frictions, etc.
Moore & Munger
33 Rector Street, New York City

CHEMICALS

For Rubber	For Industry Generally	
Accelerators	*Acids*	*Latex*
Antioxidants	*Oil of Myrbane*	*Lotol*
Specialties	*Aniline Oil*	*Dispersions*

NAUGATUCK CHEMICAL
Div. of U. S. Rubber Products, Inc.
1790 BROADWAY NEW YORK

CHEMICALS and compounding ingredients; Clay, Accelerators, Mineral Rubber.
R. T. Vanderbilt Co.
230 Park Ave. New York City

CHEMICALS and Mineral Ingredients—Whiting, Clay, Talc, Barytes, Colors, Heavy Calcined Magnesia, Carbonate of Magnesia, Pumice Stone.
Standard Since 1890
Whittaker, Clark & Daniels, Inc.
260 West Broadway New York

COLLOIDAL SULPHUR
COLLOIDAL ZINC OXIDE
COLLOIDAL COLORS
Heveatex Corporation
78 Goodyear Ave., Malrose, Mass.
Offices in New York, Akron, Chicago

COLORS—*for Rubber*
Fine organic colors—Reds, Blues, Oranges, Violets, Greens—or any shade to meet your requirements—also Rubber Dispersed Colors
Ansbacher-Siegle Corporation
Rosebank, Staten Island, N. Y.
820 So. Clinton St., Chicago, Ill.
Agents in Principal Cities

COLORS
BRILLIANT ORGANIC DYES; PERMANENT, NON-BLEEDING, LOW COST For All Cures
The RUBBER SERVICE LABORATORIES CO.
1012 Second National Building
Akron, Ohio

THE MARKET PLACE Section Continued on Next Page